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CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA

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CAMERA CRAFT

A Photographic Monthly

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January First, 1916

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A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

JANUARY, 1916

No. 1

Color Photography Achieved

By Guy C. Whidden



Color photography, through various applications of the trichromatic principles, is no new idea; in fact, much experimental work along those lines has been done during the last half century. However, results were such that when, about a quarter of a century ago, Frederick E. Ives brought forward his triple lantern stereoscopic photochromoscope and thereby revived the then practically discredited idea of color photography on the trichromatic principle, his demonstrations convinced the most skeptical that the faithful reproductions of the colors of nature by such a process was an accomplished fact. While Mr. Ives was awarded many medals and other honors by scientific societies for the photochromoscope, and a great future seemed to be promised, the public, that court of last resort, demanded not only that their color photographs be on paper, but that their color photographs be produced by at least a reasonably simple and practical method. While this has always been recognized as a theoretical possibility, and alleged practical solutions of the problem have been announced from time to time, it has remained for Ives himself to evolve a process of color photography, on paper, that was satisfactory both as to beauty of results and simplicity in working.

In his process, three plates are required, but they are furnished in a "plate pack" or Hipack ready for one simultaneous exposure in a camera that is as simple to operate as a kodak. While three color prints must be made and superimposed, they are produced at one printing in a single printing frame, after which they are developed, dyed, superimposed and cemented together to form a single thin, flexible paper print; the operations requiring only ordinary skill and care. Any desired number of prints can be made from the original negatives and made at any future time.

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The plates are purchased already loaded in a Hipack, a metal container wherein they are clipped in their proper order ready for loading into the special holder in much the same way as ordinary plates. There is no chance to finger-mark the emulsion sides of the plates and no danger of getting them wrong. Focusing is done in exactly the same manner as with any other camera using a ground glass; the plate holder is inserted and the slide is drawn in the usual way. However, as the slide is withdrawn, the blue sensation plate, an ordinary emulsion, is allowed to drop forward from a vertical to a horizontal position. A yellow screen-reflector is turned down from the top of the camera by a lever located on the outside, to a position of forty-five degrees angle over this horizontal plate. The two plates are left standing in a vertical position, the first toward the lens, the green sensation plate, an orthochromatic emulsion, and the other is called the red sensation plate, a backed panchromatic emulsion. As both emulsion-coated surfaces must be in focus, these two plates are face to face when in position; and in printing one comes reversed as a matter of course. This is as it should be, because the cementing together of the prints is facilitated by the necessity of reversing one of the set.

There is a magenta-colored screen fitted to the rear of the lens board, and this cuts down the light for the blue or ordinary emulsion plate, the one lying horizontal below the yellow screen-reflector, where it is exposed by reflection only. The light passing through this yellow screen-reflector exposes the green sensation plate, and at the same time the red sensation one, with its emulsion in the same plane, all with one single snap of the shutter. The exposure, by the way, is four times faster than the Lumière Autochrome and twenty per cent faster than the Paget process, making the speed quite satisfactory.

As the three negatives are simultaneously exposed, one for the blue, one for the red and the third for the green, the primaries of light, so are all three simultaneously developed to again insure the preservation of their color balance. The three plates are placed in the special developing tank and developed simultaneously for thirty minutes, much the same as any ordinary plates would be developed by the tank system. They are next fixed, washed and dried in exactly the same manner as any plates when they look, at first glance, like any ordinary negatives; but, upon closer inspection, it would seem that the quality of the negatives are in favor of the green sensation, with the red coming second. The difference in the negatives recording the action of these three colors is clearly visible in the three prints reproduced herewith. The first is a print from the negative acted upon by the blue, the second by the red, and the last by the green rays. The first is used to make the print in the complementary of blue, which is yellow, the second for peacock and the last for magenta.

The negatives are then placed in the special printing frame, which is made large enough to hold all three, a strip of specially prepared film is placed over the blue and green sensation negatives and a specially prepared piece of blue print paper is placed over the red sensation one and the back closed. Using sun or strong artificial light, printing is much the same as for Solio paper, only that an Hicrometer has to be used to judge the printing density. The three negatives are marked by a difference in size and by a corner being cut off of

COLOR PHOTOGRAPHY ACHIEVED

one so there can be no mistake in placing either the negatives or the printing material. The blue sensation plate is the smallest, the green sensation plate has a small chip taken off one of its upper corners and the red sensation plate is the largest one. The printing frame is so made that the blue plate can be placed only in its proper end, the large plate in the opposite one, the green of course going in the only remaining space, in the center of the frame.

After printing is completed, the film is developed in hot water at about one hundred degrees for a few minutes until the highest high light shows as a transparent spot. It is then placed in an ordinary fixing bath until it appears to be a clean piece of film with nothing upon it. The blue print paper is developed and fixed much the same as ordinary developing paper and has a glossy surface when dried without the use of a ferrotype plate or burnisher. The film print is cut in two pieces and the print from the green sensation negative is dyed red, while the one from the blue sensation negative is dyed yellow. The dyes are furnished in capsules, the contents of each to be dissolved in six ounces of water. The films are placed in their proper solutions to acquire the desired color. They cannot be over-dyed, as they will absorb only just so much color and no more. These prints, when superimposed and cemented, constitute the direct color photograph or Hicrome.

The blue print is used as a base, the red film placed over and brought into register with it and the two are then clipped together with a wooden clip. The yellow film is registered in the same way and all are then pasted across the top with a small piece of binding tissue. Registration is quite simple, as there are no ruled lines or checker-board screens to be matched up, registration being simply a matter of placing object over object, after which they are ready for cementing. This is accomplished by placing the three registered prints, like a book, with the leaves spread apart, into amyl-acetate for a few seconds, then placing them between two clean blotters and running them through an ordinary clothes wringer of medium spring tension. The finished print comes out ready for trimming and mounting, retouching, etc. Retouching can be done by applying dissolved colors or by washing out certain portions of the yellow or the red print before cementing.

The making of lantern slides or transparencies is somewhat easier, the prints from all three negatives being printed upon film in one strip. After developing, fixing and washing, the strip is cut into three pieces, one dyed blue, one red, and the other yellow. These, held together across the top by a piece of binding tape, are placed between two cover glasses, bound up, and the slide is finished.

The purity and brilliancy of color attainable by this process are not possible of reproduction by the printing press, for the reason that inks are opaque and their use necessitates many compromises. Of the processes available to the printing press the photogravure gives the more artistic effect, and this has been employed in reproducing the picture, Fire Fountain, San Francisco Exposition, by Doctor Arnold Genthe, and used as a frontispiece this month. This, a night scene, is quite a difficult subject, yet gives a very fair idea of the original Hicrome. Prints from the original negatives are reproduced herewith.

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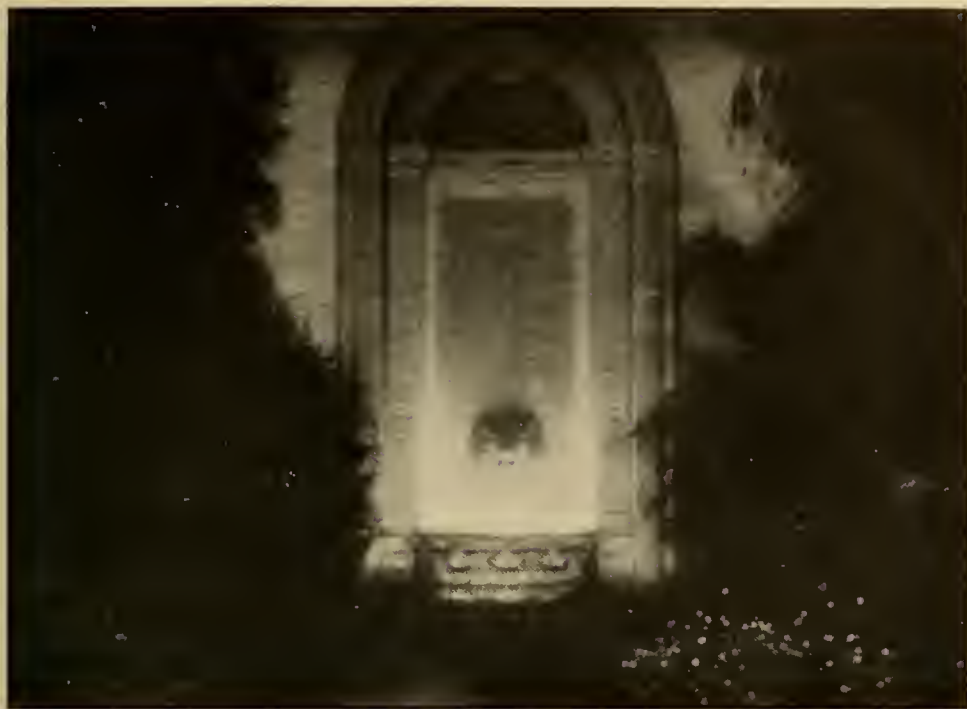
Similar processes have heretofore been advocated and worked with more or less success, but the materials used, subject as they have been to variable atmospheric and time conditions in sensitizing and keeping, have rendered results that were at least uncertain. In addition, the need of quick and expert estimation by eye observation, at various stages of the process, have made the production of successful results still less certain. Success has been but rarely possible without the exercise of special knowledge, skill and experience. Simplifications of apparatus, ease of manipulations and the perfect co-ordinating, standardizing and stabilizing of the special materials used, have heretofore been sadly needed. A process perfected so that the color printing could be done with ready-sensitized emulsions and standardized chemical units involving simple operations in accordance with printed instructions, has demanded both inventive ingenuity and scientific and practical knowledge of the subject. However, Mr. Ives has demonstrated, by years of special research and experiment, his ability to meet these requirements. In connection with Henry Hess, of Philadelphia, founder and president of the Hess-Ives Corporation, practical color photography has been made available to the public.

Among the problems presented for solution was the production of a bichromated sensitized film of definite sensitiveness, one which could be stored or sent out in paper envelopes to remain unchanged for several months. Another was the manufacture of dyes that would quickly give a predetermined depth of color that would remain unaltered even after long immersion. These, and other problems even more difficult, have been solved, and everything so co-ordinated



PRINT FROM BLUE SENSATION NEGATIVE USED FOR YELLOW PRINT

COLOR PHOTOGRAPHY ACHIEVED



PRINT FROM RED SENSATION NEGATIVE USED FOR PEACOCK BLUE PRINT



PRINT FROM GREEN SENSATION NEGATIVE USED FOR MAGENTA RED PRINT

CAMERA CRAFT

that, with correct camera exposures and adherence to simple printed instructions, successful results are insured. The attainment of any greater precision than is now possible is dependent, it would seem, upon the dry plate makers, who, for the present at least, cannot insure perfect uniformity in color-sensitiveness and density factors in their emulsions. For this reason, the most accurate results sometimes depend upon the making of a simple compensating adjustment of some other factor or factors, the means and instructions for which are provided.

One of the most valuable features of the Hicrome process is the means provided for varying the key by local alterations in hue and brilliancy of color wherever desired on a finished print. The face of the finished Hicrome print is a tenuous, yellow-dyed, gelatine relief surface from which the color can be removed with brush and water in order to brighten pinks, blues, etc., while other colors can be added to alter or vivify the greens, reds, flesh tints, and the like, and such alterations being made with almost incredible facility. In addition, perfect photographic graduation is retained by reason of the photographic-ally graduated thickness of the absorbent gelatine. Thus has the old dream of practical color photography on paper been made to come true.

In view of the success attained it is of sufficient interest to note that the first patent ever issued in this country for a process of color photography was granted to Frederick E. Ives, and that the United States patents relating to this subject and since issued to him number over twenty-five.

Do not look too much to influences beyond, powers external to us. We are apt to look too little to the things which are within ourselves. Bound up within us there is a genius and a power for achievement, the depth and extent of which depend entirely upon us and our efforts.—HERBERT EDWARD LAW.



Camera Gunning—The Sport De Luxe

By Howard Taylor Middleton



With Illustrations by the Author



FLASHLIGHT OF LONG-EARED OWL

IT WAS in a grove of tall chestnut timber; that is, tall for New Jersey, that George and I first saw the long-eared owls. There were three of them perched close together on a horizontal limb about thirty feet from the ground, and engaged most industriously in the pastime of bill-snapping.

"Can't you get 'em with the telephoto?" queried George.

"Get nothing," replied the writer testily. "What do you expect of a camera, anyway? They'd look like pinholes on the negative at that distance."

"All right, brother," continued my optimistic partner; "we'll try another way."

Suiting the action to the word, he snatched up a club and hurled it at the blinking birds. His aim was so good that the owls unanimously decided to go away from there. On silent pinions they flitted out of sight through the tree tops.

"Now you *have* done it," I exclaimed with wrath. "Of all the bonehead stunts"—

"S-s-s-sh!" and George held up his hand registering extreme caution, in the vernacular of the movies. "I saw one come down; let's do some stalking. He alighted right over there somewhere," he whispered, pointing to a distant patch of undergrowth.

On our hands and knees we stealthily approached the spot where George had last seen the swooping wings volplane for a landing. "There he is on that stump; in good camera range, too. If you fail to get a picture under those conditions"—The owl heard him, and, rising majestically, sailed to another stump. I signaled for silence and followed, this time getting within four feet of the game. Then, rising slowly on one knee and holding the camera in front

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of me, I pressed the shutter. At the click of the spring he was gone, but what cared we? His stately image remained to reward us for our labors, and we were quite content.

On our way home, George suggested that we go back in the evening and try for a flashlight. I gladly agreed; so that night after the last hint of daylight had vanished, and the heavens were aglitter with a million stars, once more we entered the chestnut grove.

This time our equipment consisted of an Imp flashlite gun, an electric flash lamp, and, of course, the camera. Arriving in the neighborhood of our former triumph, we began to search the trees with the jacklight.

For the benefit of those who are not familiar with the term "jacklight," I would say that it is a lantern with reflector attached, using either oil, gas or electricity as a source of illumination. When the rays from this lamp fall upon the eyes of a creature of the night, two bright balls of fire gleaming out of the surrounding gloom disclose to the hunter the presence of the game.

Eventually, after probably an hour's careful scrutiny, a weird noise rang through the forest. This noise can best be described as a cross between the cry of a young puppy and the mew of a cat. It sounded very near and the jacklight was at once turned in that direction.

"I've found him," cried George with great animation; "get your gun ready."

I placed the hammer of the Imp gun in the safety notch, inserted the explosive cap and the oiled paper envelope with its one-fourth ounce of flashlight powder. This accomplished, I pulled the hammer back into firing position and handed the gun to George.

Keeping the rays of the jacklight upon our quarry, we approached as close as we deemed necessary for a successful picture, and, taking a chance on the focus, I opened the shutter and gave George the word. "B-o-o-o-o-m!" and a blinding white light sprang up from the little instrument in my partner's left hand, and once more we had captured an unusual photograph of a wild owl in his native haunts.

Opossum pictures are not at all difficult to obtain if you are fortunate



LONG-EARED OWL—Bulb exposure with camera on knee

CAMERA GUNNING—THE SPORT DE LUXE



YELLOWHAMMER

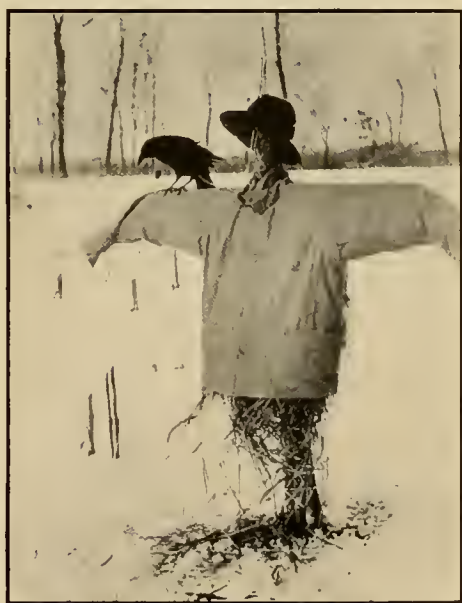


OPOSSUMS

enough to happen along when this interesting animal is abroad and unaware of the near presence of the camera man. However, if he sees you first, he is very apt to play possum, which, of course, makes a good photograph impossible. Patience and luck will bring success at last, even to the extent of bagging two with one shot. Therefore, if you would be a successful wild game photographer, cultivate patience and the luck will follow.



NIGHT HERON FISHING



JIM CROW

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The yellowhammer (golden-winged woodpecker) whose portrait adorns this tale was photographed with a telephoto lens from a distance of approximately twenty-five feet. The camera was set upon a tripod and the shutter operated from a distance through the medium of a silk thread. As Mr. Flicker had established housekeeping inside the tree, it was only a matter of watchful waiting in order that a snapshot be procured on his arrival at the nesting hole upon a paternal call.

The best way to induce Jim Crow to sit for his portrait here in the East, where we have white winters which very often bury his feeding grounds under a blanket of snow, is to tempt his appetite. Grains of corn strung on a thread attached to the camera shutter will often result in some unusual pictures if Fate is kind. Even the scarecrow has no terrors for James when he is sufficiently hungry and good yellow corn is sprinkled generously along the wide-flung arms.

Photographs of aquatic birds such as we have in New Jersey are very difficult to procure, due to the inaccessibility of their favorite feeding places. I have many times waded up to my waist in mud and water in a reedy marsh in the attempt to stalk a group of reedbird to within camera shot, and my success to date comprises a single picture of one scraggly appearing individual, who, indolent from overfeeding, stayed long enough to have his portrait taken.

I have also made many attempts to shoot rail with a camera, and I have one photograph to show for more hard work than I care to think about.

The night heron whose picture accompanies this story was fishing in a ditch when we discovered him while on a reed bird shooting trip. Marie and George with their twenty and twelve gauge Parkers, respectively, and the writer with his 4x5 Premo.

You are not allowed to shoot this fellow with a gun in our State, so we decided to indulge in a little photographic marksmanship instead. George sculled the skiff up the ditch until she grounded with a gentle thud on the soft mud; then the writer disembarked, and, in the shelter of a fringe of spatter-docks, sneaked upon his prey. Fortunately the wind, a languid breeze from the northwest, blew away from the game, and despite the squashing of my boots in the ooze, the heron kept on fishing. Finally, however, he sensed an enemy near and lifted his head for an instant—that was my instant. I raised up and fired. With a loud "Quawk!" he sprang awkwardly into the air and flew heavily away across the meadow.

"Did you get him?" came the musical voice of Marie from the skiff.

"Huh, huh," I replied happily; "I've got him, and I'll bet you a dollar to a doughnut it will be some picture." It was.

Delicacy is a great asset, particularly to a portrayer of landscape; for Nature is very delicate—especially in England, where the soft and moisture-laden atmosphere is ever blending and harmonizing. There is always, however, the besetting danger of degenerating into weakness, and as a safeguard against this it is well to bear in mind that delicacy is valuable only in combination with decision and conviction.—ANTONY GUEST.

A Photographer In The Making

By George Parke



With Illustrations by the Author

Just thirty-two years ago I broke into photography with a simple mind, a single lens, and a so-called camera, home-made according to plans obtained from the "How-to-Make" column of a boys' paper. My first negative was not only a success, but an unfortunate one, as it brought me both a licking from my neighbor's boy and a tongue lashing from his big sister. She was engaged on the weekly wash at the time of my first essay at photography, and a print from the negative created much amusement when I proudly exhibited it for the benefit of the neighbors.



SOME CHILD PORTRAITS MADE WITH INEXPENSIVE APPARATUS

Subsequent repeated failures caused me to lay aside this home-grown camera for a 5x8, purchased from my first earnings as a newsboy. Misfortune still pursued me. Climbing atop a cotton bale in order to take a steamer just landed, a voluminous focusing cloth was no sooner wrapped about my head and the camera back than I landed several feet away in a pool of mixed mud and molasses, well anchored between two barrels of the latter sweetness. The mooring cable had merely drawn taut across the bale, sweeping both camera and me aside. The camera and tripod patched up, I made many other exposures, both of photographic dry plates and my own photographic ignorance. My results were mainly negative. As plates, at that time, cost several dollars a dozen, involuntary bankruptcy soon put an end, temporarily, to my activities in that direction. Fortunately, for the stock houses at least, a professional view photographer soon thereafter availed himself of my photographic services, and by so doing boosted me further along the primrose path. He taught me how to make negatives and, incidentally, some money. From that time to the present I have never been without a camera—or an enemy. I have made flashlights

and assisted the victims in putting out the flames. I have induced indulgent relatives to sit for time exposures on slow plates and rubbed their stiffened limbs into circulation again. I have cumbered the rather limited space on a fast steam yacht at a regatta, only to busy myself at the stern with an unruly stomach while the winner was rounding the stakeboat. I have sat on my holders and stepped on my ground glass at the usual inopportune time. Sometimes I have varied the monotony by exposing with the slide not drawn or by drawing the slide when the lens was uncapped. Once I exposed twenty-four orthochromatic plates during a two weeks' vacation only to later watch the emulsion frill off the glass and slip into the wash water. Another time I washed my hands and face in a weak solution of silver nitrate and then remained in seclusion for several days until my natural color returned.

However, I occasionally made a good negative or print, and the pleasure afforded both myself and others amply repaid me for the labor and mishap of the failures. Tried out in the amateur ranks, I can now look back from the heights of professionalism and feel gratified at my successes as well as my failures, for both were instructive and both urged me on to greater efforts and better results.

Stereoscopic views were at the height of their popularity when, in 1883, I bought this first camera, a 5x8 view, fitted with a pair of Waterbury single lenses. The professional whose employ I entered was a French stereo operator who not only produced good views but made all the apparatus with which the work was done. It might interest some readers if I briefly detail the means and methods employed in taking over three thousand views of New Orleans and vicinity.

Most of the exposures were made with six-inch focus rectilinear lenses of French make, although wide-angle lenses were occasionally needed. Stops of f-16 or f-32 were the rule; and, even with slow landscape plates, quite short exposures were often given over-exposure resulting negatives too soft for albumen paper. This last was practically the only kind then obtainable and it required good, strong negatives having both detail and contrast, necessitating both care and judgment in exposure. Our old friend pyro was the only developer, and this was used in large trays, holding six or eight plates, resting upon a rocking stand equipped with a weighted pendulum for the motive power.

After the usual spotting, the negatives were scratched across the lower edge and at right angles thereto on each side, a steel point and small steel square being used. These lines, showing black in the finished print, establish a starting point from which to trim. Albumen paper was silvered, fumed, printed, toned, fixed, washed and dried, the finished prints being marked rights and lefts, trimmed on the black lines and then cut apart. The trimming and method of mounting were similar to that used nowadays.

Our greatest trouble was to expose both lenses simultaneously. Shutters were not then in existence and the cap the only means of exposure. We finally developed a shutter in the shape of a box with two horizontal doors connected by a bar. Turning the top one upward uncovered the lens, while the other fol-

A PHOTOGRAPHER IN THE MAKING



SOME HOME PORTRAITS MADE WITH INEXPENSIVE APPARATUS

lowed and closed with a catch, causing the band of light to pass across the lenses in a manner similar to the roller-blind shutters of today. For time exposures the lower lid was released from the connecting bar and only the upper one used, this acting as a sky shade as well as shutter. The same form would be found practical today, as time exposures are preferable in stereoscopic work. For subject matter at a greater distance than an ordinary view, we usually made the exposures by uncapping one lens, moving the camera a certain distance either right or left, and then exposing the other section of the plate. This, as all stereo workers know, gives a better stereoscopic effect in such distant



EXCHANGE PLACE, NEW ORLEANS—One of the oldest streets in the city. At the extreme end is the old St. Louis Hotel, two hundred years old, once the State House. The overhanging balconies are of iron and there is a bridge across the street in the distance. This stereoscopic picture was made in 1885.

views. The 5x8 camera was the regulation size for view work in those days, but the popular 5x7 of today is equally well or better fitted for stereo work. I would advise every amateur to buy the latter size, selecting one with a wide front board and fitted with a removable septum extending through the bellows from front to back. Except for these two small items, such a camera is exactly the same as the ordinary one and costs practically the same. Having these requisites, the worker, if he cannot do better, needs only to purchase an extra front board and a pair of single landscape lenses. He can easily improvise a flap shutter for them, and then he will find open to him a new field, one that has, in the past, been explored by others with the keenest of pleasure.



The Mechanics of Motion Picture Photography

By Charles I. Reid



Motion picture photography consists, briefly, of the making of instantaneous exposures in rapid succession. Since it would be impossible to make the exposures with sufficient rapidity by hand, a mechanism is employed for changing the film and making the exposures, at the comparatively fast rate of sixteen pictures per second. Such a mechanism must necessarily be very accurate and precise in its action; and, being subjected to great strain and wear, needs good attention to keep it in efficient working condition. It is therefore essential that the owner of a motion picture camera shall thoroughly understand the mechanism and the principles upon which it works. A complete understanding of the mechanical part of the work will not only enable the owner to keep his machine in perfect working condition, but will also enable him to make necessary repairs quickly in case of a breakdown while photographing some important subject. A cinematograph camera consists of a light-tight case containing the film magazines, the mechanism for stepping the film, the revolving focal plane shutter, and the gears for driving these in synchronism and at the proper speed. Besides these necessary devices, most cameras also possess many extra attachments, which, although not absolutely necessary, are, however, of great aid to the cinematographer in actual practice. Among these are film meters for measuring the number of feet of film exposed, speed indicators indicating the speed at which the camera is being operated, in number of pictures per second, and film punch for marking the film between scenes. Dissolving devices, used for the purpose of gradually opening or closing the diaphragm or shutter, so as to gradually diminish or increase the volume of light reaching the film, are built into many of the higher priced cameras.

Probably the most vitally important part of the mechanism of a motion picture camera is the intermittent movement, since on the accuracy of this depends the steadiness of the projected pictures. This part of the mechanism has the function of moving the film forward exactly three-fourths of an inch

after each exposure, doing this sixteen times a second. Since the tiny images are enlarged many thousands of times when projected on the screen, it is absolutely necessary that the intermittent mechanism shall move the film forward exactly the same distance each and every time. A variation of a thousandth of an inch would show an appreciable amount of unsteadiness of the projected picture. The intermittent movement must not only be designed correctly and made with great precision, but it must be kept in proper adjustment at all times. Due to the nature of the strain imposed on this part of the camera, it is especially liable to wear, and any looseness, if not at once corrected, will produce unsteady results. This movement is usually of the claw type, so named because it consists of a pair of claws working on a cam which imparts a rotary motion to the claws, forcing them to alternately engage in the perforations along the edges of the film, and then release the film while the shutter opens to make the exposure. Particular care must be taken at all times to be sure that the intermittent movement works in synchronism with the shutter; for if, due to the skipping of a gear wheel, the shutter should open while the film is being moved, the pictures would of course be blurred, and in this way many feet of film can be spoiled before the trouble is discovered.

The shutter, which is of the fan focal plane type, is often provided with an adjustment for varying the width of the opening, and consequently the length of the exposure as well. When the camera is sent from the factory, these shutters are very seldom marked with numbers to indicate the length of exposure at any given opening and the beginner is often puzzled as to how to figure out the exposure actually given in terms of fractions of a second. The shutter makes one complete revolution for every exposure, or sixteen revolutions per second, if the camera is operated at the normal speed. Therefore, if the segments of the shutter at full opening form a half circle, the exposure will be one-half of one-sixteenth, or one thirty-second of a second. It is well to provide markings to indicate the exposure when the shutter is partly closed. This is done by decreasing the size of the opening by one-half the former opening, which gives an exposure just one-half as long. Thus, three-fourths closed and one-fourth open gives an exposure of one sixty-fourth second, and so on through the whole range of speeds used. By marking the shutter at the different openings, in fractions of a second, the beginner can make good use of previous experience in still photography in determining the correct exposure for any subject being taken with the moving picture camera. It should not be forgotten, however, that the focal plane shutter, at a given speed marking, admits more light than a between-the-lens shutter at the same speed.

The lens used on a motion picture camera is a very important part of the instrument. Most makers of high-grade lenses also produce lenses specially adapted to motion picture work, and the photographer who has a preference for any particular make can have it fitted to his motion picture camera. The lens should by all means be well corrected and capable of giving critical definition, since the images produced by it are greatly magnified when thrown upon the screen. The focusing mount, and especially the focusing scale, must be very accurate on account of the extremely short focal length of the lenses used and

the large apertures at which they are employed. The lens should be kept perfectly clean and well polished.

After the film has been exposed, it passes into the take-up magazine, that is, if everything is working as it should; but many camera men testify that it often does not go into the take-up magazine, but stays in the mechanism of the camera instead, causing a loss of both film and temper. The usual take-up arrangement is a spring belt which exercises a constant pull on the film to draw it into the take-up box, so arranged that it is allowed to slip and avoid tearing or damaging the film by too great a strain upon it. When, through particles of dirt getting into the narrow slit of the magazine through which the film is drawn, the passage of the film is stopped, and, instead of its passing into the take-up magazine, it stays in the mechanism of the camera. When the operator learns the fact, the film is spoiled; because opening the camera to adjust matters admits light to the film itself. The moral is that it is well to keep the camera scrupulously clean at all times, not permitting dust or dirt to linger a moment when it is discovered. The slots in the magazines should be cleaned frequently and the little rollers oiled so they work without friction. The spring belt of the take-up should not be allowed to become too loose, but must always retain its friction grip on the grooved pulleys.

Even the tripod used for motion picture photography is equipped with considerable mechanism, the purpose of which is to tilt and panoram the camera while in operation, or while being adjusted. Like all other machinery connected with the work, the mechanism of the tripod must be accurate and precise in its action. The gears and screws actuating the tilting and panoramic movements must be tightly meshed, without any looseness or play of any kind, without being tight enough to bind, which would make it impossible to work the movements with the required steadiness. The least looseness of these parts would allow the camera to shake and vibrate while in operation, and this must be avoided for the sake of steady results. The tripod legs should be of stout construction, and be provided with ample means of tightening after adjustment to the required height. The tripod should never be set on springy sod which would allow of any movement. All these details are not intended as "don'ts" for the beginner, but merely to show the many new technical details to be learned when taking up motion picture photography, for these are what make the work so interesting.

Whether art is to be achieved through any medium whatever depends on the degree of scope afforded for individual discrimination, sentiment and treatment. When photography is solely the work of the sun and the camera, finished off by the operation of certain chemical laws, it can by no possibility be an art. When it is the production of the same agents, modified by uninspired manipulation, it is still outside the pale. But when the individual is in control of the operation throughout, insisting on the attainment of his ideal and preventing any appearances that he does not want, then be the medium what it may, it holds the possibility of producing a work of art.—ANTONY GUEST.

Developing Autochromes

By A. D. Williams



With Illustrations by the Author

A paragraph, "Autochrome Developing Method," in the "Club News" department for September, brought many inquiries for further information. While I have given these letters all possible attention, full details will no doubt interest not only those who have written, but other readers as well. In regard to the plan of destroying the sensibility, I have found that it is advisable to be very careful and not expose the plate to the red light any more than is absolutely necessary, doing so by either keeping the tray covered or shaded as much as possible or by flashing the light on only during the short periods required in looking at the plate, making those periods as short as possible. Upon one occasion I tried working with the light on most of the time and without shading the plate; result, a failure. Below I am detailing my method of handling autochrome plates; and, provided the exposure has been approximately correct, the results are good.

I first mix up the reversing solution and let it stand while preparing the other solutions. I have used Tabloid Reversing Compound in many cases, owing to its extremely convenient form. The Lumière potassium permanganate formula should stand at least twenty to thirty minutes after making up; even ten minutes additional will do no harm and will give ample time for the sulphuric acid to combine. In hot weather, the potassium bichromate reversing



SOME PINK GLADIOLI



A VASE OF DAHLIAS

solution works better than the permanganate. The desensitizer is then made up.

For the developer I generally use either Rodinol or Rytol Tabloids. The solutions should be between sixty-five and seventy-five degrees Fahrenheit or eighteen to twenty-five Centigrade. Deep trays and enough solution to be

absolutely sure of the plate being covered, are used. Have a tray or basin of water handy for rinsing plate. I arrange my trays from right to left: sensibility destructor, water, developer, and reversing solution. Then I turn out the light, put plate in the sensibility destructor, cover tray and let stand for at least two minutes, three minutes doing no harm. I next rinse plate in water, then put in developer, rocking the tray at first to make sure the solution flows over entire surface. After fifteen to twenty seconds I uncover tray, look at plate and cover again as soon as possible, making another quick obser-



AN UNRETOUCHED PORTRAIT

vation at end of first minute, this time holding it up to light to look through, doing so at intervals of about thirty seconds until it looks fully developed. I then remove from developer, rinse in water, place in reversing solution, where, after it has remained at least one minute, I turn on white light. Frequently, when working in the evening, I burn, at this stage, six to eight inches of magnesium ribbon within one foot of plate. After remaining in reversing solution at least four minutes, the plate is rinsed and re-developed, then again rinsed and set to dry. When thoroughly dry, varnish. This last I do after drying plate with warm air from a radiator or after warming close to an electric bulb, and find that a warm plate, free from dust, is much easier to varnish by flowing.

Directions for using the Tabloid products can be found in the Wellcome's Exposure Record. Rodinol I use in the proportion of one ounce to ten ounces

DEVELOPING AUTOCHROMES

of water. In warm weather I use the reversing solution advised by Paul Bergeron in *Photo Revue* of May nineteenth, 1912, as follows:

Water1000 cubic centimeters
Potassium bichromate 10 grammes
Sulphuric acid3 to 6 cubic centimeters

The sensibility destructor, recommended by M. F. Dillaye, is made up as follows:

Water100 cubic centimeters
Potassium bromide, one in ten solution.. 10 cubic centimeters
Sodium bisulphite, saturated solution... 2 cubic centimeters

The temperature of the solutions is rather important; and, if possible, distilled water should be used for all of them. In making exposures I prefer to run a little to over in preference to under-timing. I use an exposure meter in daylight, and when working by flashlight measure my distances and vary the amount of flash powder accordingly, using white sheets or white holland as reflectors, back of flash and to one side of subject to avoid shadows.

As having some relationship to the matter of color photography, and being of possible interest to the reader, I am sending herewith a few prints from negatives made on several of the special color value plates on the market. The picture of pink gladioli is from a negative in a Hydra Panchromatic plate used with a Wratten K3 filter. Incidentally, it won seventh prize in the Hydra Plate Competition held some months ago. The other, the dahlias, was made on a Paget Color Process plate. The portrait was made on a Wratten Panchromatic plate used with a K3 filter, and shows quite plainly the advantage of such a plate in the matter of avoiding retouching, as there has been absolutely no spotting or retouching of either the negative or print. The other illustration, the greenhouse interior with azaleas and crocuses, the reader who is familiar



AZALEAS AND CROCUSES—GOOD COLOR VALUES IN MONOCHROME

CAMERA CRAFT

with the colors of these flowers and their foliage and the difficulty of reproducing them with anything like correct color value, will recognize as an excellent rendition of the subject. This was also made on a Wratten Panchromatic with the K3 filter. I would explain that practically all of my photographic efforts are put forth in connection with my engineering work and in securing illustrations for articles describing power and similar plants, and my essays into other fields are both rare and limited. The examples shown are offered only for the lessons they may teach; as, in their production, I have satisfied myself that the value of color correct plates for certain work greatly overbalances the slight difficulty involved in handling them with necessary care.

Sometimes Nature is so charming that we may get a beautiful result by simply taking her as she is. In such kindly mood she may even arrange our picture for us, with all the lines, masses and tones complete. It would take a Stoic to refuse this sort of gift. The scheme, however, is not often carried to its fullest pictorial possibility, and there is the danger of thinking it more complete than it really is. In such a case it should be remembered that the artist's function is quite a minor one. It may be rejoined that he has selected his scene, and has watched and waited for the right effect. He has pursued his quarry with the subtlety of an Indian, and has caught it on the wing. Does he not deserve credit? Yes, and something more than the credit that is due to the trapper, for he has certainly displayed some pictorial discernment. But, after all, he has only represented Nature, and has not interpreted her, and that is the test of the artist. I fear that in this remark I may be touching a few readers in a tender place, but it is just as well to understand that the mere ability to select a scene at the happy moment and to depict it by "pure photography" does not make an artist, though it is evident that there are many who think that they need attempt no more.—ANTONY GUEST.





Local Workers at the London Salon

By the Editor



Somewhat belated, the catalogue of the 1915 London Salon of Photography reaches us. Our California readers will be pleased to learn that the eleven California workers were represented by nearly one-half of the pictures accepted from the United States, they being credited with twenty-nine. The four workers in San Francisco had thirteen pictures to their credit, the largest number from any one city with the exception of London itself. The four Los Angeles exhibitors were credited with but two or three less, while Berkeley, Sacramento and Tropico were represented. One hundred and sixty-one exhibitors from all parts of the world were responsible for the three hundred and sixty-six pictures making up the Salon.

The good showing made by our Pacific Coast workers this year is one that we trust will be exceeded in following salons,



A BIT OF GENOA—LONDON SALON

By James N. Doolittle

as we feel quite sure can be done if only a larger number will submit their pictures. To the best of our knowledge the four from this city whose pictures are listed in the catalogue were the only ones submitting their work; and the fact that each of the four had at least three of their pictures accepted is fairly conclusive evidence of their ability to produce pictorial work. We reproduce herewith one of the accepted pictures, doing so mainly for the lesson that it has to teach. While the archi-

tectural features are not such as are available to all our readers, it is quite obvious that the pictorial merit the work holds is not dependent thereon to any great extent. On the other hand, the maker quite evidently was capable of appreciating an arrangement of line and a distribution of light having strong pictorial quality. It is, as I believe nearly every reader will agree, far from easy to secure a good picture of this kind without including a greater number of planes than are employed in this. It is also somewhat difficult to obtain a satisfactory and convincing portrayal of brilliant sunlight, sunlight of the luminous, illuminating quality Mr. Doolittle shows us in his picture. Securing both these, together with good composition and tonal values, is indicative of both an artistic perception and a photographic technique of a high order. It is quite easy to imagine that this particular scene would attract the attention of but an almost negligible portion of the photographers that might pass that way. Of these few, how many would have selected the right point of view and how many would have secured the delicate gradations of light and shade that are so important in the success of the picture?

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

BLUE FOCUSING SCREEN: Some years ago, when doing more landscape work than at present, I found a blue focusing screen a great help in determining just how any desired view would look when reproduced in the monochrome of a photographic print. I purchased from a dealer in stained glass a sheet of blue-tinted glass of a suitable size, and this I turned over to a party who made a business of sand-blasting watch cases for the firm for which I was then working. The glass came back to me with a beautiful ground surface; and, after being cut to fit my camera back, gave me the desired blue-colored focusing screen.—H. J. K., Alabama.

AN IMPROVISED PLATE LOADING ROOM: Often, while on a vacation trip, I have found it desirable to change the plates in my holders when no dark-room or suitable closet was available. I have then improvised a dark-room as follows: Turning back all the blankets and comforts on my bed, I well spread the half-extended length of my tripod in place on the bed and drew the covering back over it. This forms a small tent, in which I first placed my plates and holders and then my head and shoulders, with a spare blanket draped around so as to thoroughly close up this opening. Of course, this "room" rapidly becomes uncomfortably close on a warm day, but it is certainly very dark, and that is the main thing. I have used this method for three years and have never experienced any trouble from light-struck plates.—R. K., California.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 1

That Competition of Ours

For the benefit of our many new readers, new subscriptions starting so frequently with the January issue, we will recapitulate. In our issue of July last, we announced a competition for pictures suitable for farm paper cover illustrations, explaining that we would not acknowledge the receipt of or return any of the prints sent in, but assuring the prospective competitor that no use would be made of his work except as we might reproduce a few in quite small size. In our August issue, we reproduced four cover illustrations that had been actually used by one of the leading farm papers and tried to impress our readers with the value, to them, of entering the competition, by reason of the advantage accruing from working to a definite aim. In September, we went still further into this latter phase of the subject and urged the sending of such prints as the reader might have available that seemed suitable. In the October number, we reproduced six pictures, typical of those received, and offered our own criticisms thereon, explaining that the closing date had been extended to January first. In our November issue, we editorially urged the making of special negatives in the light of some valuable criticisms covering fourteen of the pictures sent in, criticisms of exceptional value because made by a gentleman on whom devolves the task of selecting a suitable farm paper cover illustration each month.

We have devoted nearly a dozen pages and twenty reproductions to this subject. To date, a little over eight hundred prints have been received. Of this number, some ten are worthy of consideration as perhaps available for the purpose on which the competition is based. This we believe is due to the fact that the pictures sent in have been merely those that our readers had available, as we requested in our editorial in the September issue. While the examples reproduced in August were of the upright form, and in the criticisms by both Mr. Potter and myself, the necessity of the upright form was insisted upon, but few of the pictures received were so arranged. If any of those sending in their work made negatives specially for the competition, they did so without giving much heed to suggestions offered them as to how they should proceed.

We have no fault to find, none whatever. We simply wish those who may be interested to know just how matters stand. As we see it, there is some little interest displayed, too much to allow us to drop the matter, despite the fact that what has been shown has not resulted in enough pictures of sufficient merit to justify us in asking the attention of possible buyers. Trying to do this last with so little to offer would but make it harder to achieve our aim at a later date. However, in order that those kind friends who favored us with what they had may feel that we wish to carry out our part, we will submit the prints received to a competent jury early this month, and on its decision make the small awards promised. These will be announced in the February issue, at

which time we will offer a plan that will give those interested another opportunity and one that, in the light cast on the subject by this first competition, may furnish the interested worker a foundation upon which efforts can be expended with a better promise of success.

The Passing of A. W. Taprell

W. A. Taprell, of the Taprell-Loomis Company, died at his home in Chicago early Sunday evening, November fourteenth last. "Tap," as he was familiarly known to the photographers and the trade throughout the country, has, during his short span of life, made himself one of the best known and most highly esteemed personalities in the photographic industry today. Born in Bath, England, February nineteenth, 1867, and coming to this country at an early age, he worked his way upward from a salesman to the head of what is perhaps the largest exclusively mount factory in this country. Starting in a small way, the business, under his able management, grew rapidly, until today the mounts turned out by his house are known and used throughout the country.

Large in heart and mind as well as in stature, always equipped with a fund of quiet humor and optimism, he was a most welcome visitor at all photographic conventions and other gatherings. A keen memory for names and faces, a charming personality and a sincere sympathy, these combined to make his cheerful smile and hearty hand-shake something that will be sadly missed by his host of friends. Whole-hearted and generous, "Tap" had only to be known to be loved and esteemed. His passing is a loss, a real one, to his thousands of friends throughout the country. Genial, unassuming, ever ready to assist the worthy, either the individual or the cause, no small number will hold his memory in kind remembrance in the years to come.

A Correction

On page 483 of our last or December issue, just to the left of the caption of the illustration thereon, Mr. Hall was made to say that ortho or color-sensitive plates required the utmost precision as to exposure. This he had no intention of doing, his manuscript reading that color plates, meaning Autochromes, Paget's and the like, required exact exposure. We trust this correction will meet the eye of every reader who may have noticed the mistake, as we would not wish any one to feel that Mr. Hall is lacking in either a knowledge of the subject on which he may write or inclined to be careless in placing such knowledge before others. Owing to the rather lengthy caption, the necessity of an additional short line of matter at the side inspired either our assistant, the linotype man, or the printer, to change the words "color plate" to "ortho or color-sensitive one," the latter, to the guilty party, seeming to cover the same thing as the original words. As Mr. Hall explains in his letter to us, color plates, owing to their thin emulsion coating, have slight exposure latitude, while most of the orthochromatic emulsions are heavily coated, frequently being double-coated, with the result that even greater latitude is afforded than with the ordinary plate or film.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

The Focal Plane Shutter

The efficiency of the focal-plane shutter has long been a favorite matter for discussion, and while on the one hand it has been credited with qualities that it never possessed, on the other it has often been unduly discredited. It is true that when set to give the shortest possible exposure it is often a shutter of very low efficiency, owing partly to bad design and construction, and partly to the necessity of using a very large aperture, but, nevertheless, the shutter that is least efficient in these circumstances usually has a very high efficiency when set to give more moderate exposures, while it also has certain other special advantages which we will refer to later.

At the start it may be as well to attempt a definition of efficiency. When dealing with moving objects it is necessary that the exposure should not exceed a certain duration of time in order that the image may not be blurred by the motion of the object. The light-effect produced upon the plate is, however, not necessarily proportional to the duration of the exposure, because the amount of light varies at different periods of the exposure. Taking for consideration any one point on the plate, the light that reaches that point steadily increases from the start of the exposure until a maximum is reached. This maximum effect lasts for a certain short time, and then the shutter begins to cut off the light, which steadily diminishes until the exposure of the point is at an end. Supposing the total duration to be one-hundredth of a second, then it is obvious that the full amount of light transmitted by the lens does not reach the point during the whole of that one-hundredth second, but only for a shorter period. The total light-effect is therefore only equivalent to that which would be produced if the whole of the light passed by the lens acted upon the plate for some period shorter than one-hundredth second, and this

period is called the efficient exposure, while the ratio of the efficient exposure to the total duration of the exposure is called the efficiency of the shutter. Thus, with an efficiency of one-half, or fifty per cent, and a duration of exposure of one-hundredth second, the efficient exposure will be equal to one two-hundredth second. This means that so far as the arrest of motion is concerned the exposure is one-hundredth second, while so far as exposure in the ordinary sense of light-effect produced on the plate is concerned the amount is only one two-hundredth second.

The efficiency may be as low as thirty, or as high as eighty per cent. for a duration of, say, one-thousandth second. In either case the image may be perfectly sharp, but in the one case the effective exposure is only about one three-thousandth, while in the other it is one twelve hundred and fiftieth second, and the first of the two plates may be badly under-exposed, while the other is sufficiently exposed to give a good negative. This shows the importance of high efficiency.

In the focal-plane shutter the efficiency depends entirely on two factors, the width of the shutter slit (s in the formulæ) and the width of any single light-pencil (p in the formulæ), at the plane in which it is intersected by the shutter blind. The efficiency is always equal to $\frac{s}{s+p}$ from which formula it is evident that s , or the slit width, is the most important factor. An increase in s increases efficiency, while an increase in p lowers it, but as in the worst cases p will never exceed one-fourth of an inch it is obvious that low efficiency can only be a serious trouble with very narrow blind slits. With a slit of one-inch width and with p at its maximum, the efficiency is four-fifths, or eighty per cent, and it can never be less than this unless the slit is reduced. The value of p depends on the distance of the shutter blind from the plate, and upon the lens aperture,

and the former factor varies between one-fourth and three-fourths of an inch in cameras of different makes, while the latter cannot well exceed $f\text{-}3$ or be less than $f\text{-}11$. The most usual large aperture in use is $f\text{-}4.5$, while the average blind distance may be taken as one-half of an inch, and in these circumstances $p=0.111$, or one-ninth, and the efficiency is ninety per cent. for a slit of one inch, eighty-two per cent. for a slit of one-half inch, and seventy per cent. for a slit of one-fourth of an inch, so that it is not very low in any conditions usual in practice.

With extreme speeds of one-thousandths or less the slit must be very narrow, one-eighth or one-tenth of an inch, and in such cases large aperture is essential and blind-distance becomes an important factor, for p is always equal to the blind-distance divided by the f -number of the aperture. Taking an aperture of $f\text{-}4.5$ and slits of one-tenth, one-fourth, one-half and three-fourths of an inch, the following are the efficiencies for different blind-distances:

Blind distance in inches	1/10 in. slit	Efficiency per cent 1/4 in. slit	1/2 in. slit	3/4 in. slit
1/4	64½	82	90	93
3/8	54½	75	85	90
1/2	47½	69	82	87
5/8	42	64½	78	84
3/4	37½	60	75	82

This shows how much depends on the build of the camera when very high speeds are in question. Very fine workmanship is necessary to get the blind-distance as small as one-fourth of an inch, and three-eighths is a more usual distance, therefore somewhere about fifty-five per cent. is about the best efficiency we can expect with a slit of only one-tenth of an inch, though with a slit of three-fourths of an inch the efficiency is ninety per cent. With a slit of one inch the lowest efficiency with a three-fourths blind-distance is eighty-six per cent., while with the more usual one-half inch it is ninety per cent., hence we may say that with slits of one inch and over blind-distance is a negligible factor.

The duration of the exposure given by the focal-plane shutter is strictly proportional to $s+p$. Suppose we set to a tension that gives one-thousandth second with a one-tenth inch slit and stop $f\text{-}4.5$, the blind-distance being one-half of an inch and p equal to 0.111, or

one-ninth. If we increase the slit to one inch we increase $s+p$ from 0.211 to 1.111, the exposure is therefore equal to $\frac{1}{1000}$ sec. $\frac{1.111}{.211}$

which is approximately equal to one-two hundredth second. Therefore with an inch slit this is about the shortest exposure we can get. We can then only take advantage of the high efficiency secured with a one-inch slit for the purpose of exposures ranging from one-two hundredth second upwards.

With a blind-distance of three-eighths of an inch, we can get ninety per cent. efficiency with a three-fourths-inch slit and $f\text{-}4.5$, and with this slit the shortest exposure will be about one two hundred and fiftieth second.

The efficient exposure always varies directly with s alone, so if we increase the slit from one-tenth to one inch we increase the efficient exposure ten times, though the duration is only increased five times. This is because with the wider slit we have double the efficiency. With any one slit and fixed tension the efficient exposure is always the same, however we may vary the aperture. An enlargement of the aperture increases p , and therefore lowers the efficiency, while it increases the duration of exposure in exactly the inverse ratio, therefore the product of the two, or the efficient exposure, is always the same.

As we have shown, when working at a high efficiency the ordinary type of focal-plane shutter with blind at one-half of an inch from the plate does not give very brief exposures, nevertheless many workers get sharper results than they expect with lens shutters working at the same speeds. This can be attributed to the position of, and peculiar character of the focal-plane shutter. It is situated in the part of the camera that is held most rigidly, hence there is less chance of vibration. Further, if vibration does take place, it only affects the part of the plate that is being exposed at the moment. With a lens shutter the whole plate is exposed at once, and hence any shake must be manifest everywhere, while the shutter also acts in the least rigid part of the camera. No shutter is absolutely free from vibration, for touching the release sets free a considerable amount of force. If the mechanism is well balanced the vibration is small, but quite enough to affect sharpness if the camera is carelessly held. With a lens shutter and a

A PHOTOGRAPHIC DIGEST

moderately long extension arc is required to avoid any shake of the lens, but with a focal-plane shutter the movement all takes place in the rear of the camera, which is just the part most firmly held, being generally supported against the operator's body.—*British Journal of Photography*.

Color In Photography and In Vision

In a recent article on "Color Rendering in Color Processes," I dealt mainly with the errors into which untrained critics are likely to fall when criticizing the truth of the rendering of an Autochrome, or any other photographic color reproduction. The same mistakes can, of course, be equally well made when an actual painting is the subject criticized, but it is somewhat important to remember that color rendering, as given by a photograph, must always be somewhat different from the visual appearance of the object, for while the production of a color photograph is a purely physical process, the action of vision is partly physical, partly physiological and partly psychological. If we could produce a color photograph that was an exact replica of the original, then no doubt both the photograph and the object would produce the same physiological and psychological effects, and appear the same; but this is, of course, impossible. Like an ordinary photograph, or a painting, the color photograph can only be a transposition of the original, not a replica. It cannot have the same qualities of luminosity, etc., and at the best must differ from the original in much the same way as a piece of music differs when transposed into another key. Therefore the original and its copy produce different effects, and while the skilled painter can to some extent allow for this, the photographer cannot do so.

To explain the distinction between physical and physiological perception of color, we may consider first a very extreme case. Let the object be, for example, a red. Then any kind of photographic color process with correct exposure will render that object as red, and we cannot, by any method short of modifying the light or using color filters, trick the plate into seeing it in any other color. It is, however, quite easy to make the eye see it as a blue, and not as red at all. This can be done by simply interposing a revolving Shelford Bidwell complementary

disc between the object and the eye. This consists of a disc out of which a sector of forty-five degrees has been cut. The rest of the disc is divided equally into two parts, one being covered with black velvet and the other with unglazed gray or buff paper. If this disc is revolved so that the black sector follows the open one, no change is visible in a colored object placed behind, but if we reverse the direction of rotation so that the buff part follows the open sector while the black sector precedes it, the original colors disappear and are replaced by their complementaries. Thus our red object appears blue-green to the eye, though it will still photograph as red.

The reason of the action of the disc is the purely physiological one of fatigue of the retina. The momentary exposure of the retina to red fatigues it, or decreases its sensitiveness to red, without in any way impairing its sensitiveness to green and violet. When the neutral sector interposes, the red which it reflects is unscen by the patch of the retina which has previously been fatigued to red, therefore that patch perceives only the green and violet, which are complementary to the red and with it make up the gray. The black sector which follows destroys all these impressions, instantly restoring the full sensitiveness of the retina, and this series of phenomena is repeated at every revolution. The open sector is small compared with the neutral sector, and if the speed is high enough the red impression does not exist for a sufficient time to be perceived, though it is quite long enough to fatigue the retina. The green-violet image lasts longer, the sector being bigger, and is therefore the only one we perceive. This is, of course, an extreme case. We do not see nature through a Shelford Bidwell disc, and we hardly ever are deceived by complementary effects, but all the same the phenomenon of fatigue is a universal one in vision, and is continually modifying all the colors presented to the eye. It no doubt has a good deal to do with effects of contrast in color, though these are generally classed as psychological or mental effects only. Suppose there is a blue tint in nature, reflecting green and violet very strongly, but very little red. Alongside it we may assume a strong red. On glancing from the red to the blue, the retina, being fatigued by the strong red, will not perceive the feeble red reflected by

the blue object, and therefore that object will appear bluer than it really is. This is one of the effects that the painter can and will unconsciously allow for, but which the photographic plate will ignore.

The following is a rather striking method of illustrating color contrast, but as a good deal depends on the exact tint of the screens used and on the strength of the light employed, it is necessary to experiment with such materials as may be available and not to rely exactly on the instructions alone. In my hands it has worked well as follows: Using an optical lantern fitted with an early type of upright incandescent gas burner and also one of the earliest types of mantle, I made up a lantern slide of two superimposed pieces of colored glass, one being ruby and the other chromium green. The two together gave a dull pinkish colored patch on the screen. On drawing each glass slightly to one side, a red border appeared on one side of the patch and a green one on the other, while the patch itself changed from feeble pink to strong blue violet. The light composition of the patch was identically the same in both cases, but its change of color was most remarkable. The explanation may be taken to be that the brilliant red and green stripes fatigued the eye to red and green, leaving it much more sensitive to the blue transmitted by both glasses.

This experiment illustrates a type of color change that is quite common in vision, but absolutely disregarded by photographic plates. A true photographic representation will reproduce the colors just as they are. It will make no alteration in the central patch when it is bounded by red and green, and the luminosity of the red and green being much less than in the original will not have the same visual effect when we view the photographic reproduction. The painter could make the central patch actually bluer and so get nearer to the actual appearance of the original, but photography will not do this, therefore the effect must inevitably be different.

It is an open question whether some of the defects in color representation with which we debit various color prints are not really due to the diminished color contrast; that is to say, whether they are not due more to what must be a universal feature of all photographic records of color rather than to a peculiar defect of the process itself. It is

very noticeable that the most satisfactory color effects have generally been produced by the three-color projection process, in which the conditions are far more favorable for the reproduction of color contrast, the colors used being generally more brilliant and more luminous than in any other process. —C. Welborne Piper, in *British Journal of Photography*.

Photographic Manuscripts

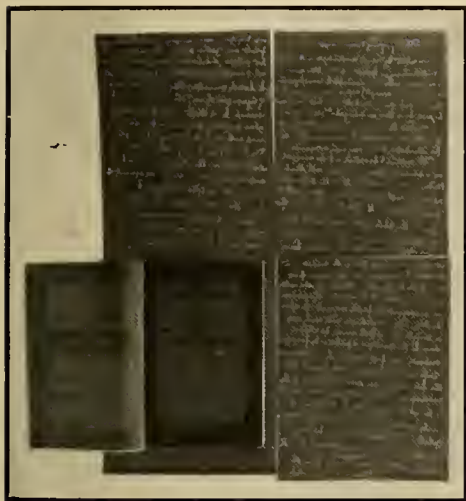
An article by Hugo Hinterberger in the *Wiener Mitteilungen* points out that there are many occasions when it is desirable to secure, as insurance against accident, for example, copies of manuscript, etc., such copies not for immediate use, but such as can be read with the aid of a lens or by enlarging.

He says: "While the technique is very simple, yet there are little peculiarities of procedure that can be illustrated out of my own experience. The material to be copied is to be arranged on a plane surface and fixed with thumb tacks in such relation that the sides, when reduced, will generally correspond with the proportions of the plate. The rules that govern the photographic reproduction of pen sketches, wood engravings, etc., must be followed. The lens must have its optical axis centered on the middle of the material to be copied, and the camera front and back be parallel thereto; the illumination even. To obtain the maximum sharpness use an anastigmat, preferably one made for reproduction, but a rectilinear will work, even a single lens. Both must be stopped down to the smallest aperture. In focusing, naturally with full opening, do not focus on center or margin, but at a point between the two, seeking an even distribution of the unsharp area; then, on stopping down, equality of the whole field will be obtained. [The writer advises a slow, preferably a process plate.] The exposure must be long enough to secure good covering from the whites, without a deposit from the letters, and if violet ink has been used, employ an orthochromatic plate and yellow screen. Development should be with a dilute restrained developer, and at room temperature; should occupy from ten to twenty minutes. Old hydroquinone or glycin will do. The reduction can be carried to a tenth, and the negative alone preserved

A PHOTOGRAPHIC DIGEST

for record. It is easily read with a pocket magnifying glass."

I have had quite a little personal experience in this kind of work. It is not as easy as it reads, as equality of illumination is often difficult to obtain; but it is very useful to have these small copies of important manu-



script, etc. The United States Government service regularly employs it. Where the record is made solely for protection and with little likelihood of a need to frequently read it, I would advise the use of glossy bromide paper for the negative. It is easy to see white letters on a black ground, but the image is of course reversed. Some people can read reversed writing; if not, it must either be read in a mirror, recopied, or the original photograph made through a reversing prism. As an example, I have just made a copy of this manuscript, written with a carbon negative pencil on three sheets of paper, together with a page of the article quoted from. They are reduced to the size of a lantern plate on glossy bromide, the exposure being one minute and the illuminant a two hundred watt nitrogen tungsten lamp, three feet from manuscript. I can read the reduction without a lens.

Strengthening Paper Filters

A paper in the *Chemical News* by Dr. Clayton Beadle on the toughening of filter papers describes a very useful and simple method of strengthening a filter paper to such an extent that it will withstand the pressure produced by a powerful filter pump.

Filtering being normally a slow process, exceedingly so with some solutions, a pump is a very useful appliance, but, generally, it is quite useless unless we are provided with extra strong filter papers or special appliances to preserve the paper from rupture. The method recommended is as follows: The paper is folded and fitted into a dry funnel in the ordinary way, and then a few drops of nitric acid of specific gravity 1.42 are allowed to fall in the apex of the paper cone. The funnel is canted and quickly rotated so as to saturate the free unsupported apex of the cone with the acid, and is then immediately rinsed out under a tap, being filled and emptied from the top repeatedly, and finally rinsed out with distilled water if the presence of tap water is undesirable.

Notes On Lighting

The degree of relief or solidity which any object presents to the camera, says a writer in *Photography and Focus*, will depend very largely indeed upon the direction from which the light falls upon it. A full front light—front, that is, as regards the camera, not as regards the aspect of the face of the object itself, gives the very minimum of relief. This is explained by the fact that when the light is falling on the object from the direction of the camera itself, the lens sees only those parts which are illuminated. With light falling from behind the object, very little relief is shown for the opposite reason, it is only the parts which are in the shadow which the lens sees. On the other hand, this kind of lighting will sometimes give the very maximum relief to the object itself; that is to say, as far as making it stand out from its surroundings is concerned. A side light, not exactly at one side, but coming from a direction a little nearer to the camera, gives the greatest appearance of solidity, but very often more depends on cutting off the front light, at least when working with daylight. A study of the effects of controlling the lighting is one of the most important things a photographer can undertake, if he is likely to have to do work in which he can control it, as in most portraiture, figure, and what is called technical photography in general.

Under the heading "Lighting the Background," the *British Journal of Photography* says: Backgrounds often give disappointing results when taken into use, that is to say, the effect in the photograph is quite different

from the impression which was made in the dealer's show-room. This is due to several causes, of which one is color. A warm-toned ground gives quite different values from a cold-toned one. But it is mainly due, we think, to the conditions of lighting which obtain in the ordinary studio. In the majority of cases there is not too much room, and in order to prevent the shadow of the sitter from falling upon the background the latter is put as far back as possible. Consequently it is in shadow, and photographs much darker than the artist intended it to do, and any atmospheric effect is quite lost. We have received many inquiries as to the best background for "sketch" work, the querists apparently thinking that there is some magic paint which will photograph as white even when in shadow. When the studio roof is solid over the background it is difficult to alter this state of things, but when the glass extends to the end wall a considerable improvement may be effected by opening a narrow slit, say, eight to twelve inches wide, to illuminate the background. If the sitter is not too close to the background the lighting of the figure will not be affected. When this method is not practicable it is a good plan to have the backgrounds painted in situ. The artist will then instinctively make them to suit the existing lighting, that is to say, lighter at the top than they would be otherwise.

A writer in *Amateur Photography* calls attention to a phase of lighting that forms what is virtually an optical illusion. He says: Much of the sensation of solidity which we feel is due to the incidence of the light upon the object. When a single picture is said to be "very stereoscopic," it will generally be found that it contains strongly marked light and shade, suggesting irresistibly that some parts are in front of others. How much we rely on this, and how much we take certain directions of lighting for granted, is well shown by a simple experiment. If two similar coins with a clear impression are fastened up side by side, one right way up and the other upside down, are lit from a point well above them, photographed together, and a print made, we shall notice a curious thing. If the print is cut in half and one-half turned round so that both images of the coin are the right way up, one of these looks in relief, like the real coin, the other appears to be

sunken in or in intaglio, like a cast from the coin. Here the employment of a lighting that is the reverse of what is usual has completely reversed our sensation of relief. We are accustomed to see most things in light coming from above; and so, when we look at the coin, we instinctively accept this as the direction of the illumination, and thus get an impression the opposite of what is true.

Reproduced Negatives

When daylight printing is the only possible way of obtaining prints as in carbon, platinum, or collodion chloride, it is often necessary to make duplicate negatives so that several copies can be produced simultaneously. This operation is often shirked by photographers, who believe that special plates are indispensable for producing the transparency and negatives. Although it is convenient to use slower plates than those ordinarily employed for camera exposures, it is quite possible to duplicate any negative by using similar plates to those on which the original was made. The one important point lies in the exposure, and as the plates generally used for studio work are many times faster than bromide paper, over-exposure and flat images are the usual result when duplicating by contact. The easiest way of avoiding this is to expose at a considerable distance from the light. We have worked at ten feet from a sixteen-candlepower lamp and given an exposure of three seconds, the results being quite satisfactory. If the dark-room does not allow of this distance, the lamp may be shaded with two or three thicknesses of tissue paper, so as to bring its intensity within workable limits. A slightly restrained developer should be used and development carried on to full density, it being better to reduce, if necessary, rather than to have to intensify. If a reversed negative be required, it is desirable to make the transparency in the camera, turning the negative film away from the lens. At a pinch the transparency may be made by contact, turning the film side of the negative away from the film side of the plate. If the exposure be made at ten feet or more from the light and the printing frame be kept quite steady, the result will be sharp enough for portraiture and many other classes of subject.—*British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

The Customer For View Work

A lot of professionals read this department and here is a little story that will carry a thought for them. A man came into my office the other day to ask me what really was the price he should pay for the making at intervals a few weeks apart, six 8x10 negatives, of a building just started, with prints from these negatives as he should care to order them. As a business man he supposed that such a query put to a photographer should at once bring forth a price, just as would a question as to the cost of six tons of cement delivered at intervals as ordered. But, with the several photographers called upon it was different. They all had a lot of questions to ask and a lot of mental or pencil and paper arithmetic to go through with before they could answer, and, when they did, each one made a different price. This indecision suggested to our friend's mind that there must either be a vast difference in the quality of the work or that photographers were in the habit of basing their prices on what they thought the prospective customer would pay. Asking them in turn for samples of like work he found that but one of them could turn to a portfolio or other receptacle and produce what he wanted to see. Most of them ran from one room to another, tumbled over a lot of old dirty prints and brought him something that they explained, in more or less technical phrases, was a spoiled print somewhat similar to the work wanted. This suggested that they not only had no regular price, but that none of them had more than a very rare commission of the kind, hardly enough to assure them experience in that particular line. No wonder the poor victim came to us for assistance. But why should our commercial photographers or even the portrait man who also does commercial work, find it so difficult to be business-like and appreciative when a customer comes to his counter? Why does he not

have a regular price for making an average size negative when the conditions are such that he can get on a car, go to the spot and make his exposure, return and develop the plate and be ready for another job within say an hour, the price to cover the making of the negative and the delivery of one print, specifying that the negative is to remain the property of the photographer? Then, if the distance or any other factor makes the job more time consuming, extra time to be charged for at so much per half or full hour. This latter charge should be high enough to cover the inconvenience caused by uncertainty as to just the amount of extra time that may be consumed through some special requirements of the customer. He may want the photographer to await the appearance of some other person, the finish of some preparations, or something of the kind; and, in using the extra time the photographer may disappoint some other customer. It should also be remembered that the working hours of the view or commercial photographer, when making exposures, are of short duration, and, therefore, must be charged for at a rate somewhat higher than would be consistent in the case of a skilled workman in some other line where the work could be pursued during every hour of the work day. While there is no particular need of confusing a customer by making a different price for different sizes of negatives, the difference in the cost of different sizes of plates being but a small part of the charge, prices for the prints should be based on size of paper used. However, I would not presume to say just what is the best way to charge for any or all of the work. What I would urge is that the photographer willing to accept commissions to do view or commercial work should be prepared to quote a price on an ordinary job, one confronted by only ordinary conditions, and quote the price promptly and convincingly. He should also be prepared to show the prospective customer samples of

good commercial work in various sizes and styles of finish, the samples to be quickly available and in clean, presentable condition. Being so prepared should not be difficult and a moment's thought should show one the importance thereof, particularly in the matter of a favorable impression upon the prospective customer who nearly always is, when this class of work is wanted, himself a business man with a fairly keen appreciation of businesslike methods.

Reproducing Line Subjects

I wonder why the owner of a camera does not more often use it to make negatives from line drawings and the like. Once in a great while I run across a worker who has some appreciation of the possibilities in this direction. One in particular I have in mind, a friend who gladdened the hearts of a large number of friends last Christmas with excellent copies of a beautiful steel engraving, a reproduction of a celebrated painting. From his copy negative he made an enlarged negative, using his enlarging apparatus for the purpose. This enlarged negative allowed him to make large prints suitable for framing, and make them by contact so as to get the desired degree of blackness of the lines.

The average worker has tried to copy a photographic print; and, in so doing, found it hard to avoid too much of a black and white effect. Quite naturally he supposes that when the picture to be copied is in itself only black lines on a white ground, no difficulty should be experienced. In this he is mistaken, at least, to the extent that he thinks it can be done in the same way as he would go about copying a print of the ordinary kind. However, rightly gone about the production of a suitable negative is not difficult. The worker must remember that too much contrast is out of the question and yet he must guard against any method of increasing contrast that may have a tendency to fill up the clear glass lines of the negative, the lines that should print black and clean in the print.

The method of procedure employed by my friend who has done considerable of this work is as follows: For rather coarse drawings and where there is not much reduction in size, a medium or slow plate is used. Where the lines are very fine or where con-

siderable reduction is made, a "process" plate is best. Full exposure should be given, even at the cost of making a series of trial exposures on a small plate. The best developer is the one with which the worker is best acquainted, or should that not seem advisable, the one recommended by the maker of the plate, particularly in the case of the process plate. The development should be prolonged even to a point where some of the smaller lines appear but faintly in the ruby light. To make for success, the fixing should also be done most thoroughly and done without exposing the plate to any white light.

To secure sharpness of the lines, particularly when there is a great amount of reduction, as when quite a large original is reduced to lantern-plate size, much care is required. The plate should be backed as a matter of course.

Interesting Costume Pictures

An amateur friend sent us some quite interesting pictures last week and perhaps other readers who happen to have an obliging sister that is handy with the needle may care to follow his example. The idea originated in a visit to a moving picture show in which a war time drama was enacted. The quaint costumes of that period inspired the sister to search a few musty garrets for a hoop-skirt, and some old daguerreotypes and a handy needle furnished the rest. Care was taken to avoid stiffness, a fault that is prone to crop out when costume work is attempted, and some attention must be given to see that the style of dressing the hair conforms to the costume in period. This done, this amateur found himself quite popular as a photographer of the modern young lady in the dress of her grandmother's time, and the results achieved with the natural backgrounds afforded by the garden and lawn shrubbery, were very pleasing.

No Compliment

"Did you tell that man who was round photographing for the newspaper that you didn't want your picture taken?"

"Yes," answered the eminent but uncomely personage.

"Did he take offense?"

"No. He said he didn't blame me."—*New York American*.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

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NEW MEMBERS

4146—Roy W. Teachout, R. F. D. No. 1, Box 46, Westernville, N. Y.

3¼x4¼, developing papers, of mostly everything, landscapes, snapshots, groups, etc.; for bust portraits and general amateur snapshots. Class 1.

4147—William D. Goodwin, 527 West 124th St., New York, N. Y.

Class 2.

4148—Roy S. Hunt, R. F. D. No. 1, Bryant, Ind.

Class 3.

4149—Arnold F. George, 610 Duke St., Saskatoon, Sask., Canada.

3¼x4¼, 3¼x5½ and 5x7, developing papers, of miscellaneous landscapes and home portraits; for the same. Class 1.

4150—N. O. McDonald, Knobnoster, Mo.

3¼x5½ and post cards, developing papers, of odd and interesting subjects, out of the ordinary, also Colorado and other Western scenery; for beach scenes, bathing girls, mountain and National Park scenes, also Indians. Prints and post cards same size. Class 1.

4151—Chas. E. Weeks, 224 Yonge St., Toronto, Ont., Canada.

Class 2.

4152—Thomas J. Bones, Elephant Butte, N. M. 5x7 or 8x10 and smaller, developing papers, of mountain scenes, novelties and miscellaneous views; for landscapes, historical views, waterfalls and most anything. Class 1.

4153—W. A. Blair, R. F. D. No. 1, Warren, Vt.

Class 2.

4154—A. C. Millington, care C. B. & Q. Ry., La Crosse, Wis.

Class 2.

4155—W. H. Hurley, Keasey, Ore.

Post cards and 5x7, various papers, of wild animals, forest and Western scenery; for lantern slides especially, but will exchange post cards or prints. Class 1.

4156—Thomas P. Mason, 415 Bellefontaine, Kansas City, Mo.

Class 2.

4157—Wallace S. Allen, 908 East 20th Ave., Denver, Colo.

Lantern slides of Colorado sunsets, landscapes, Exposition pictures, surf, etc.; for waterfalls, marine, or unique subjects. Lantern slides only. Class 1.

4158—F. W. Hatch, Box 22, Winkelman, Ariz.

Class 2.

4159—B. A. Backers, 26 Smith St., Charleston, S. C.

3¼x4¼ and 5x7, developing and printing-out papers, of draped and undraped studies of the nude; for the same. Class 1.

4160—M. H. Cross, 6 Elm St., Sharon, Pa.

All sizes up to 5x7, various papers, of scenes, portraits, copies, etc.; for general all-around prints and anything of interest, also some nude studies, portraits, etc. Class 1.

RENEWALS

1864—A. G. Lindgren, Floodwood, Minn.

3¼x5½, developing papers, of landscape views of northern and central Minnesota; for general views of interest. Post cards preferred. Good work for good work. Class 1.

2645—Hugo H. Schroder, 303 E. State St., Bettendorf, Iowa.

1¾x2¾ to 3¼x5½ and post cards, developing papers, of birds, nests, landscapes and miscellaneous subjects; for birds, nests, wild animals, flowers, nature studies and any interesting subjects. Class 1.

2792—Dr. J. R. Young, Box 515, Chico, Cal.

Class 2.

3721—W. T. Wright, 594 Carroll Ave., St. Paul, Minn.

3¼x4¼ and up to 5x7, developing and printing-out papers, also lantern slides unmounted, of Switzerland, England, and the Continent, waterfalls, snow scenes, Swiss mountains, seascapes, beach scenes, etc. Also will trade 3¼x4¼ negatives for same size if good. For good, clean-cut pictures and lantern slides from any part of the country, Yellowstone, California and mountain scenery. Only good work sent or received. Class 1.

3770—J. William Harmon, P. O. Clerks' Box, Oklahoma City, Okla.

2¼x5½, 4x6, 5x7, single-weight prints, of developing papers of pictorial photography, landscapes, marines, mountains, snow scenes, cloud effects; for similar subjects. Also enlargements to 8x10. Only first-class work sent out and same expected in return. Class 1.

3976—Chas. C. MacKay, 111 Beck Ave., Waterloo, Iowa.

Class 2.

CHANGES OF ADDRESS

3358—Asa L. Brower, 1075 24th St., Ogden, Utah.

(Was Kamas, Utah.)

3860—E. A. Kline, Canon City, Colo.

(Was Council Bluffs, Iowa.)

4018—C. A. West, 112 North State St., Salt Lake, Utah.

(Changed in December from above address to 619 South 1st East, by mistake. Above is the correct address.)

4037X—George Wolff, Jr., 157 Fulton Ave., Astoria, L. I., N. Y.

(Was Yonkers, N. Y.)

4067—C. W. Welty, Pandora, Ohio.

(Was Effingham, Ill.)

4105—Lewis S. Todd, Huey, Ill.

(Was Plainwell, Mich.)

He is now ready to exchange post cards.

Class 1.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Instruction For Members

At a recent meeting of the Camera Club of the High School of Commerce of New York City, the work for the coming term was outlined. The faculty advisor, R. G. Bennett, will devote a portion of each Wednesday to short talks on photography, and on Fridays will give instruction in enlarging. Members will be taught to do their own developing and printing, and much benefit will no doubt be derived from the instructions given.

The Pittsburg Salon

As there is still time, we would like to again call the attention of such of our readers as are doing pictorial work, to the announcement in this department last month relative to the coming Pittsburg Salon. That notice gave the address from which entry blanks could be secured. These blanks are not absolutely necessary and should any worker find the time too short he will be perfectly safe in overlooking that formality and sending his pictures, simply mounted with generous margins, addressing them: For the Photographic Section, Academy of Science and Art, in care of receiving room, Fine Arts Department, Carnegie Institute, Schenley Park, Pittsburg, Pennsylvania.

Springfield Photographic Society

Many people visited the fine collection of artistic photographs constituting the First Annual Exhibition of the Springfield Photographic Society at the rooms of the L. M. Pierce Piano Company on Stearns Square. The display has been a revelation, not only to casual visitors, but to the members themselves. That the meetings of the past six months or so, during the short life of the society, have been of a very practical character, the exhibit gives full proof. None of the groups of pictures is without merit, and not a few are of first-class quality. This notably successful public introduction should result in a considerable increase of member-

ship in the society, which already is one of the largest in the country.—*Springfield (Ohio) Republican*.

The Print Gallery Exhibition

This exhibition, held at the Print Gallery, 707 Fifth Avenue, New York, from December first to eighteenth, differed from the last one held two years ago in this, that all the pictures were by workers in this country. One may judge as to the severity of the selection by the fact that the fifty-seven prints accepted were the work of thirty-eight exhibitors. Louis A. Goetz, Florence B. Livingstone and W. H. Rabe contributed the quota from California, each having one picture accepted, no small honor when it is considered that over twenty others did no better.

The Missouri Camera Club

The club opened in its new and larger quarters, 5035 Delmor Boulevard, Tuesday evening, November ninth, with a lecture by Professor R. James Wallace, of the Cramer Dry Plate Company. The subject, "Photography as Used in the World's Largest Observatory," is, to many persons, somewhat vague, but Professor Wallace, having spent much time at Yerkes Observatory, gave, with the aid of several hundred beautiful lantern slides, the history of this immense structure from the laying of the cornerstone to the completion of the numerous departments.

The club's largest audience was given an idea of the work possible with the world's largest forty-inch refracting and the twenty-four-inch reflecting telescopes used there.

The club has at the disposal of its members a large demonstration room, a skylight with two studio cameras, enlarging room and camera, two printing rooms with machine, and a plate-changing room. All interested are cordially invited to attend the club on the second and fourth Tuesdays of each month, lectures being given on these evenings.



OUR BOOK SHELVES

"In Nature's Haunts With Youthful Minds"

This is the title of an ideal gift book for children and young people, a book that has much to tell in a most interesting manner concerning the mysteries and the wonders of the things about us, the earth, the air and the sky. Its language is plain, its style is simple and convincing, and there is no question as to the value of the information it furnishes. It is a new book, the result of years of nature study, and the author, being both a proud father and an expert amateur photographer, is eminently qualified to both tell his story and illustrate it in a way that will appeal to the youthful mind. The author, William A. Bixler, is an old friend and contributor to this magazine and we can commend the book without reserve. Handsome cloth binding, nearly two hundred pages, seven by nine inches in size, price fifty cents. The illustrations are nearly two hundred in number, practically all of them being reproductions of photographs made expressly for the book. It can be ordered direct from the author, William A. Bixler, Anderson, Indiana.

"Photographs of the Year 1915"

The American edition of this looked-for annual is, as heretofore, limited to a certain number of copies, and our readers who do not wish to be disappointed should get their orders in to their dealers or to the American publishers, Tennant & Ward, 103 Park Avenue, New York. The volume is the same, in general style and size, as the one for last year; and, as its general scope, the recording of the progress of pictorial photography, is so well known, there is little reason for going into a detailed account of its contents further than to say that it contains about one hundred full and half page illustrations, reproductions of the best work of the year throughout the world. As heretofore, the price is, paper covers, one dollar and twenty-five cents, cloth binding, fifty cents extra, postpaid.

"British Journal Almanac, 1916"

This standard compendium of photographic information will be out about the end of January and should reach this country the early part of February. This year's volume will contain as its special feature "A General Review of the Resources of the British and Allied Nations in Photographic Manufacture and Trade," with the usual contents made up along the same lines as heretofore. The book has a large sale in this country, and like other annuals the fact that they do not have the same length of sale as regular books necessitates dealers stocking only what they feel sure they can sell. Therefore early orders are necessary to insure obtaining a copy. George Murphy, Incorporated, are the American agents, their address being 59 East Ninth Street, New York. The price is fifty cents and one dollar, respectively, for the paper and cloth covered editions. Postage is extra, according to zones, they weighing three and four pounds wrapped, according to style of binding.

"American Annual For 1916"

Once more we are pleased to announce the arrival of this ever-welcome photographic annual, the only one published in this country. It is too well known to require description and the distribution among the dealers makes it hardly necessary to describe the special features of this new volume. The articles are varied and of more than usual interest, while the illustrations are particularly well selected and attractive. Quite a few of these last are full-page ones printed in a handsome brown, evidently by the offset process. The edition is generally sold out soon after being placed on sale, and our readers are advised to place their orders as soon as possible that disappointment may be avoided. George Murphy, Incorporated, 57 East Ninth Street, New York, are sole sales agents. The price of the book: paper covers, seventy-five cents; cloth binding, one dollar and twenty-five cents.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

Mrs. W. Parker and Adrienne Des Noyers are doing the honors at Kohler's main studio, Los Angeles.

Miss Teddy Eason, of the Flying A at Santa Barbara, is well up in the movie work—the finishing end.

Shirley V. Bacon has just moved into his new studio in Pine Street, Long Beach. Everything new and up to date. Miss Nell Rodger and Miss Allie Cody are doing the reception work.

John O. Tucker, of San Jose, took gold medal for his fine views of Santa Clara County at the San Diego Exposition. Mrs. Tucker takes no back seat when it comes to medals. She received one for her prune pie. Readers can write for recipe.

A new use has been found for Probus Paint. Mr. Lavel, a commercial photographer of Fresno, painted his Ford with it and says the job is better than any paint shop could have done.

Carl Lemoine, of Fresno, wants the Craft to find out why Duke Buttrick never wears an overcoat in that town.

C. M. Willis, still with E. M. Hammond at Porterville, is as fat, jolly and good natured as ever. Mr. Hammond made a trip to photograph Mt. Whitney this fall and got some very fine views.

Powell, of Hanford, boasted about the fine road in Kings County, and to prove it took the writer for a ride November fourteenth. He is just able to get around now. Some fine roads!

L. C. Buttrick has several detectives on trail of a 3A high-grade kodak he borrowed from a prominent dealer in Los Angeles to take on a trip to San Diego on the good ship *Harvard*. The Duke has seen how things can disappear on board ship. To make a long story short, he had to pay for the kodak.

Some Interesting Pictures

The manufacturers of the Imp Flashlite

Gun have sent us some most interesting samples of photographic work done by users of their wonderful little flashlight apparatus. One is a wild moose swimming a forest stream, another is a young lady catching a ball, the third is a most realistic picture of an armed burglar entering a room, while the last shows Madame Pavlova, the famous Russian dancer in the midst of a thrilling whirl. This last was made by Mr. Lundberg, of the *Chicago Tribune* staff, and clearly demonstrates the value of the "Imp" gun to the press photographer who is ambitious to secure the desired picture under any and all conditions. The capabilities of this excellent flashlight utility seem to be limited only by the speed of one's lens and shutter, and of course every press photographer is well equipped in that direction. Ask your dealer or write the Imperial Brass Manufacturing Company, 1215 West Harrison Street, Chicago, Illinois.

The Harvey Exposure Meter

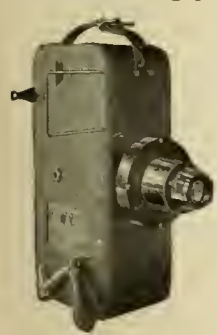
In our advertising section will be found a most interesting announcement covering an excellent new utility that has, at this writing, been on the market but a few days. This must not be taken as implying that the meter is a new thing, an untried and uncertain help, for the simple reason that it is exactly the opposite. Mr. Harvey has not only had the meter subjected to the most rigid tests by well-known specialists in commercial photography, but he himself has made records of thousands of exposures made during the past three years, from Florida to Canada, using various plates and films, in order to confirm the estimates of correct exposure under different conditions. Any purchaser can verify the correctness of the exposures given by the meter by comparing them with some known exposure of his own on a difficult subject that has proven successful. This we have ourselves done with the meter before us and the agreement between its readings and some of

NOTES AND COMMENT

our entries covering unusual exposures is so perfect as to be almost startling. A few years ago we took a night picture of the Del Monte Hotel, giving it forty minutes at f-16, using an ordinary plate. This meter, under the heading of illuminated park buildings, calls for ten minutes at f-11, using fast plates. Had we had the choice, we would have used fast plates, and, had our lens not been one of extremely long focus, about sixteen inches, we would have used f-11; and, doing this, the relative exposure would have been ten minutes as the meter reads. While the hotel is not a park building, it was illuminated and situated in a park or parked grounds. We believe this meter is the only one that gives the exposure for all stops and all classes of subjects without resetting or without making calculations. Ask your dealer to order one for you or send direct to the manufacturer, G. L. Harvey, 105 South Dearborn Street, Chicago, Illinois.

Simplex Products Receive Awards

Our readers will be interested in learning that the exhibits of the Simplex Photo Products Company, at both the San Francisco and San Diego Expositions were awarded the gold medal by the Grand Jury of Awards. Although a complete line of photographic products manufactured by this concern was shown, the feature of the exhibit was the Alamo Motion Picture Camera—a thoroughly practical machine using standard moving picture film and selling at

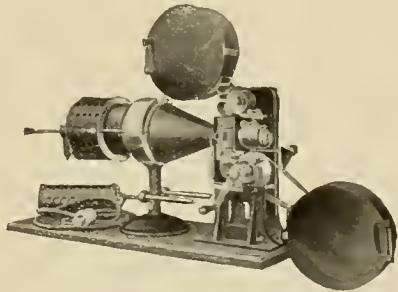


the popular price of thirty-five dollars. This is intended for the use of the amateur, and will undoubtedly open an entirely new and fascinating kind of entertainment and instruction. It enables the amateur to keep an accurate photographic record

of the experience within his own family circle upon which he will look back with pride and delight in after years.

The capacity is fifty feet of standard motion picture film in one loading which in no way limits its usefulness since any number of daylight loading magazines may be carried and used in taking successive subjects,

the resulting negatives being easily joined for printing continuous positive film for projection. The camera has an aluminum body with a grain leather covering and weighs, with its loaded magazines, only about five pounds, while the bulk is so reduced that the entire outfit can be carried in a suitcase and still leave plenty of space for clothing, etc. The lens regularly furnished with the Alamo Camera is ideal for all work in a good light and is said to have an excellent depth of field at its fixed or general focus, this rendering the camera most simple to use. After gaining some experience with the camera, the user may replace the regular lens equipment with the Zeiss Tessar f-3.5, the same as is used on the highest-priced professional cameras.



In the accompanying cuts an exterior view of the camera is given, together with a picture of the Baby Simplex Projector, by use of which the amateur can screen his own films. This last is very closely allied with the Alamo Camera, as it, too, is built for use in the home. It is said to be the smallest and most practical machine of this sort outside of the toy class. It consists of lamp-house and set of condensing lenses in focusing jacket, on pedestal base, in combination with a head of simple and efficient design, having an automatic fire shutter which closes to protect the film immediately when cranking is stopped. This projector is regularly furnished with a projecting lens of two and five-eighths inch focus, which, with arc lamp used, will give brilliant screen pictures, 3x4 feet, at a distance of twelve feet from screen, 4x5 feet at fifteen and 5x7 feet at twenty feet distance.

Send for pamphlet, "Alamo C," illustrating and describing these latest additions to the field of motion picture apparatus, which will be gladly sent upon application to the

manufacturers, the Simplex Photo Products Company, Morris Park, Long Island, New York.

A New Color Process

There has been invented and patented by John Lewisohn, of 88-90 Fifth Avenue, New York, a new method or process of producing colored photographs. Quoting from the Letters Patent:

"The method consists in obtaining three negatives of an object to be reproduced on suitable orthochromatic silver emulsion photographic plates with the aid of three respective color screens by the well-known three-color photographic process, so that one of the three negatives will produce a positive print with the yellow color value; another, with the red color value; and the third, with a blue color value. The blue print is made first from the yellow color value negative. The entire blue part of this blue print is washed with a yellow wash, such as aurantia, which is then dried and afterward immersed in a weak solution of silver nitrate sufficiently strong to dissolve the blue and leave the yellow image of the yellow color value negative. The so-formed print is then washed, to eliminate the silver nitrate and dried. The side of the print bearing the image is then coated with a blue-print sensitizing medium. The sensitizing of the print may be done to advantage before the print is quite dry, to get an even coating. The resensitized print is impressed with an image through the red color value negative, which negative is adjusted on the print so that the image formed by the red color value negative registers with the image under the coating formed by the yellow color value. The blue print so formed is washed with a red color wash, such as red eosin and then dried and treated with a bath of silver nitrate, strong enough to dissolve the blue, leaving the red image on the yellow image previously formed. After washing and drying the so-formed print, the side having the images is recoated with a blue-print sensitizing medium, the same as previously stated, dried and exposed to produce an image through the negative having a blue color value, which image will properly register with the images formed by the previous negatives. The print so formed will have the blue color, the red color and the yellow

color placed successively in the order described; and in combination will produce a picture of substantially natural color, i. e., the image on the print of the object will be substantially in its natural colors.

"It is self-evident that the process can be used with only two, or with more than three colors if desired. The principle of the process consists in forming a series of superimposing blue images, of which the preceding blue color of the image has been substituted by another color before the succeeding blue image has been formed."

"The Wellcome Exposure Record and Diary, 1916"

A rich harvest of extensive experience and expert skill is stored in this wonderful little volume. It informs and advises on everything,—on photography by night and the correct quantities of flashlight powder; on green, or sepia, or blue toning of bromides, or warm tones on gaslight papers; on time and factorial development, the intensification of color plates, exposures for interiors, the speeds of bromide papers, the staining of prints, etc. Not one of the varied aspects of the art appears untouched; and besides all this, there are instructive tables, simple formulæ and a multitude of useful hints. If, however we were to be asked to state the outstanding feature of the book, we should say that it makes the practice of photography exceedingly simple. It banishes difficulties and insures success even to the beginner.

Of especial value is the "Wellcome" Exposure Calculator, an ingenious rotary device, fixed to the back cover, which, by one turn of one scale, indicates the correct exposure of any plate or film at any time of day or year. For British, Colonial, American and Continental plates and films, independent exposure factors are given.

The illustrations have always been a feature of this publication; not only because they are the work of leading experts, but because they are reproduced with great skill and taste. This year there are included examples of the work of two leading American photographers, Merl La Voy and Robert G. Weyh, Jr.

That experts who produce such work endorse the recommendations contained in the "Wellcome Photographic Exposure Record

NOTES AND COMMENT

and Diary" is sufficient alone to make every photographer feel that it is an essential part of his equipment. Specially ruled pages for recording particulars of exposures, diary pages for the year and pages for memoranda are other features of this little volume, which is issued in wallet form with pencil complete.

Of the "Wellcome Photographic Exposure Record and Diary" three editions are published—for the United States of America, the Northern Hemisphere and for the Southern Hemisphere.

The "Wellcome Exposure Record" can be obtained from all photographic dealers and booksellers. Price in the United States, fifty cents.

Another Cincinnati Exhibition

Elaborate plans for a spring exhibit are already in preparation by the Photographers' Association of the Cincinnati Chamber of Commerce. The two exhibits held during 1915, one in May and the other in October, proved most successful mediums of attracting the attention of the general public to the excellent results achieved by Cincinnati photographers in portrait, home portrait and commercial photography. The first exhibit was on a small scale, and yet it attracted about five thousand people. The second one, held in October, was on a much larger scale and drew ten thousand people. The class of those attending both exhibits is worthy of comment. But a very small percentage was of the drifting, curiosity-seeking type. The vast majority were there seeking to be instructed, and it kept the twenty members of the Association busy explaining light and tone effects, modern posing, costuming and a hundred and one other intimate points of the photographic art. The result of the exhibition in each case was excellent from a commercial point of view. It has greatly stimulated the business of photography. The people who attended the exhibit left with the impression that they owe it to themselves, their families and friends to be frequently photographed. Orders which have come in since the last exhibit may be traced directly to it. In fact, pointed inquiry in some cases revealed that the business came as a direct result of the exhibit. The members of the Association are elated with the success of their exhibit from the standpoints of both art and business. The

exhibits are of an educational nature and the business is the fruit of the thought put behind the exhibits. The show next spring will be much more elaborate and will be participated in by several new members who have been added to the lists of the Photographers' Association since the October exhibition.

A Letter From "Ipsco"

11 East Fortieth Street, New York,
November 26, 1915.

Editor, CAMERA CRAFT,
San Francisco, Cal.

Dear Sir: There seems to be an impression in the minds of some people, due to a persistent rumor, which apparently has sprung from nowhere, that the Ica Company has either gone out of business, or is soon to go out of business. We have never heretofore taken notice of this rumor (except in one instance where we had the pleasure of damping up one source of such misinformation). The latest rumor is to the effect that there is at this time a representative of Messrs. Ica in this country, who is about to wind up the affairs of the International Photo Sales Corporation. As we consider this rumor very derogatory to our interests, and as it is possible many of your readers are under the impression that they will no longer be able to obtain our goods, we are asking you not alone as a matter of courtesy but as a matter of justice, to publish our emphatic denial of any adverse action in regard to this company.

Like most rumors, this particular one probably originated through circumstances misunderstood by those not in close touch or sympathy with the affairs of this company. As a matter of fact, the International Photo Sales Corporation has been placed in a better position than heretofore to offer the products of Messrs. Ica and other importations to this country after the European war. Last May, in anticipation of the urgent need for better facilities with which to meet the ever constant and growing demand for Ica cameras and accessories, we moved to larger and more commodious quarters at 11 East Fortieth Street. In addition, we increased our selling force, and it is only a very short time before further changes for the betterment of our business will take place.

To deny that our business has not suffered by the conditions now existing in Europe

CAMERA CRAFT

would be absurd. Every merchant who imports or uses in his business goods imported from abroad, has suffered to a very material extent, and we offer no apology in this direction for circumstances over which we have no control. We claim, however, and we believe our claim is a just one, that so far as the importation of photographic goods is concerned, we have been very successful, and we have the further assurance from our factory that advantage will be taken of every possible channel through which goods can possibly reach us.

Many of your readers are no doubt under the impression that the fame of Ica cameras is centered in two or three models. This is quite wrong, as Ica efficiency is apparent in the entire line of forty-three models. We have a stock of cameras which, while admittedly below normal, is worth the consideration of those of your readers who prefer the niceties of adjustment and perfection of mechanical detail which are the hall marks of Ica quality. If they will write to us direct, we shall at all times hold ourselves willing and in readiness to tell them the proper camera for their particular requirements. Personal service to the consumer is one of the policies grounded in the foundation of our business, a business that has steadily grown to admirable proportions, and which, by reason of our direct appeal to the consumer and the quality of the House of Ica back of it, we expect to see grow ever more in volume as more people recognize the superior quality of the products we import.

It may not be generally known to your readers that we are the importers of a famous English camera made especially for us, which is sold under the name of the Ipsco Reflex. We also represent an American motion picture camera, the Kinograph, which, for the money, we consider the most practical on the market today. With these various representations, you can readily see that the rumors of the discontinuance of our business activities about which we write you are entirely without foundation. We do not feel that the rumors were sent abroad by any one with a vicious desire to hurt our standing in the trade, but we believe that our failure to state that they are entirely baseless and without foundation in fact or truth, would result in a general misunderstanding of our real status.

In conclusion, it may likewise interest your customers to know that Messrs. Ica are working with almost a normal force of employees in an endeavor to fill all their orders. True, a great deal of this activity is due to the home demand; nevertheless our interests, as you can readily imagine from what we have stated above, are not being overlooked, and your readers will do well to keep in mind that from us they may obtain what we are sure they desire at all times, the best in photography, and that means "Ipsco."

Very truly yours,

International Photo Sales Corporation.

(Signed) John L. Curley, Secretary.

Electric Lamps For The Photographer

Bulletin No. 58-A, issued by the Cooper Hewitt Electric Company, Eighth and Grand Streets, Hoboken, New Jersey, is a catalogue of the various forms of Cooper Hewitt electric lamps for all photographic purposes. It is handsomely illustrated with reproductions of work by the Gerhard Sisters, Rau, Morrison, MacDonald, Hayes, Newman, Trabold, Edmondson and others, in addition to some two dozen pictures of various forms of electric lamps. Interesting and instructive because covering a subject concerning which every photographer desires to be informed, our readers should not neglect to write the firm whose address is given above and avail themselves of its willingness to send copies free upon request.

The Illinois College of Photography

George C. Bell, a student of the I. C. P. in 1897, was winner of one of the first prizes at the last Northwestern Convention. Mr. Bell also achieved the highest score in the State of Iowa, at Des Moines last spring.

A circus visited the city recently and quite a number of the students were busy with their view cameras. The motion picture class photographed the parade, and the films were shown at one of the local moving picture houses.

Effingham has been the only city in the United States to show moving pictures of the Willard-Johnson bout, which took place in Cuba last winter. One of our students in Canada, where the film was developed and printed, sent it to one of the local motion picture theatres.

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CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. **Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. **New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. **Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

Subscription Price, \$1.00

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Foreign, \$1.50

FOREIGN AGENTS:

Argentina	Juan Grant & Son, Buenos Aires
Australia	Harringtons, Ltd., Sydney
Canada	Kodak Australasia, Ltd., Sydney
England	United Photographic Stores, Ltd., Montreal
Mexico	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
New Zealand	Calpini y Cia., Mexico City
Philippine Islands	H. J. Jones & Co., Ltd., Wanganui
Japan	Squires, Bingham & Co., Manila
	K. Kimbel, Yokohama

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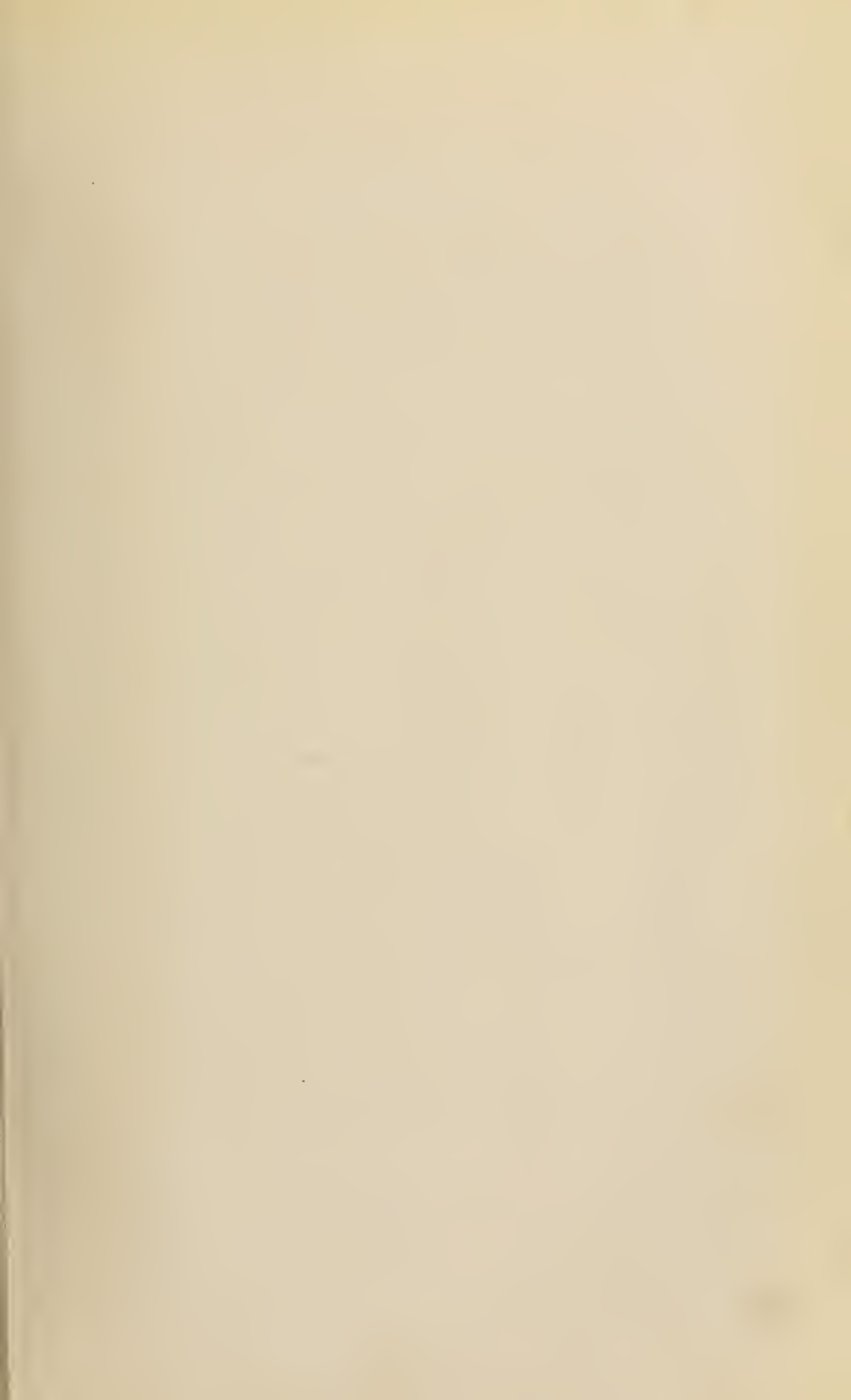
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A PORTRAIT
By J. C. STRAUSS



CAMERA





CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

FEBRUARY, 1916

No. 2

Strauss, Artist Photographer

By Sigismund Blumann



Illustrated with Portraits by J. C. Strauss



J. C. STRAUSS, PHOTOGRAPHER

MONTHS ago the Editor of CAMERA CRAFT, knowing of my high esteem for the man and his work, asked me if I would write an appreciation of J. C. Strauss for this magazine. My lack of promptness in complying with the request has not been due to any reluctance to treating the subject or because of there being too little to be said, but rather the contrary. On several occasions a dozen or more pages have been written, only to be destroyed when I came to read them over. Each such effort resulted in what I knew would be too enthusiastic and fulsome to please Mr. Strauss, and I certainly would not wish to sin in that direction. For, you must know, Strauss means much to me, has done much for me, and his spirit of unworn enthusiasm for the art in which he excels and his interest in his fellow artists, amongst whom he holds so high a place, has helped me, helped

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me on with the sometimes grateless task of keeping alive and going our Photo Fellows of the World.

Mr. Clute tells me that he has a keen recollection of Strauss as a kindly, cordial gentleman, yet mainly interested in his work, whom he met, I don't know how many years ago, when his first "studio" was located at the head of a narrow flight of steps at one side of a second-hand store. It is not within



my knowledge the number of times that "studio" has moved to larger and finer premises, but pictures I have seen of later as well as the present place show expensive tastes unstinted and prosperity attained. That the simple goodfellowship and cordiality have not dwindled with success, as is too often the case, I can attest.

Here is a man taking portraits for a living. Just a gallery photographer. Accent that. There is, I regret to say, too great a tendency to hide behind fancy names the following of an honorable calling. Let the ordinary call themselves anything they choose, Strauss takes portraits as Romney, and Reynolds, and Sargent painted them. This is the point—a photograph from the Strauss Studio is an individual, artistic production with Strauss all over it. It needs no signature, and the sermon which all real success preaches finds itself in

STRAUSS, ARTIST PHOTOGRAPHER



this, that from the exposure to the use of the final paste brush, love of the work puts its mark of distinction upon the whole. Someone told me this man gets fabulous prices for his "Strauss-Proofs." I am prepared to wager he would turn out work of equally fine pictorial quality for three dollars a dozen, if that

CAMERA CRAFT

were all he could get. The high price obtained is a result of merit, not the incentive or the cause. And this shall be proven by what follows.

We have never met, we good friends. I have seen Mr. Strauss only in a picture of himself sent by request. He has not even a snap shot of me. This is the story of our friendship.

A few years ago, as Dean of the Photo Fellows, I wrote him, telling what we were, what we were trying to do, and invited him to join in our efforts. His reply was not only a ready acceptance, but a heart-warming letter in which he expressed himself as ready to do whatever he could to further any cause that



might better photography and make the way of photographers, amateur or professional, easier and pleasanter. He sent liberally of his work and has since loaned us invaluable collections of European masters to circulate. The Fellows offer no profit, no prominence, and forbid anything approaching exploitation of any sort. We work along quiet ways, quietly. Do you get the spirit of this busy man who gladly finds time to be freshly enthusiastic? Lesser men (and one woman) have been insultingly skeptical, voicing an open desire to first know what good participating with us could do them, individually. Strauss saw immediately what good he, individually, could do.

STRAUSS, ARTIST PHOTOGRAPHER

This is the soul, kindred of all masters' souls, the buoyancy of which floats its possessor to the heights unknown to smaller minds. To drown it were as difficult as to submerge a cork. Sordidness of environment or contact therewith cannot wear off the bloom of such a spirit. It makes for its possessor the high place in modern photography. This is not an advertisement. It goes too far afield to do Strauss any good in that direction, and even did it not, my poor efforts could hardly add any degree of eminence to his renown as a man and as an artist. But the telling does me good and the reader should be benefited by knowing how a man who lives by his camera can still find that deep pleasure in what is, to all of us, I hope, an art that sweetens life. Hobby! Yes. A hobby is something that redeems us in a mercenary age from the damnation of being merely hacks. In Strauss we have an example of a man whose business is his hobby.

Kind providence only knows what the mechanics whose names hold the destiny of reproductions may do to the pictures submitted with this article. This is certain, no mechanical art can show the exquisite finish of even the mounts, which, of course, is the least important part of

a picture. But let me tell you of the mounts. On the face they present a flush, unbroken surface, yet the print differs in texture from the surrounding paper.

AN INDIA PROOF

By J. C. STRAUSS



The picture is surrounded by hand-ruled lines, some of which enclose brush-tinted borders. The method and the results, even in this detail of the mount, in one way more attest the painstaking affection of the maker for his work.

A sheet of rough, laid paper has a cut-out removed from its center and is then pasted onto another sheet of the same or similar stock. The print, on the selected paper, is then trimmed exactly to size and carefully fitted into this opening and pasted in position against the under sheet. The ruled and tinted border is then put on by hand. So perfectly is this done that, to the keenest eye, no joining or crossing of lines or variation of tint is discernible; and, as to the making up of the mount, the most delicate touch fails to discover where the photograph has been inset. An embossed line of print tells that this is patented. Strauss need never have patented it. If there be others having the requisite skill, few of them have the love for their work that would cause them to take the pains. All this is merely technical.

The pictures are pictures, not mere photographs of people. Each is a study of the individuality of the subject. The pose, the costume, the expression, all seem blended to a purpose. That purpose,—to reproduce the sitter as he exists *within* his mere outer semblance. Of the composition, lighting, and such matters I shall not speak. My esteemed conferees, Hartmann, Anderson, Lively, and others, have written whole books on these subjects and to them I refer you for ready-made opinions. Before me is a picture of a little girl seated on a table beside a globe of fish. Bright sunlight streams across her and into the glass. It is a picture saturated with light, streaky with it, luminous, radiant. Every law of square, compass, and rule has been trodden upon in its production; precedent has been treated with contempt. Yet here is a work of the highest artistic merit. The picture is symbolic. The soul of that child, a fair-haired girl of slender, ethereal form, speaks to us from every portion of the print. The rays of sunlight might just as freely, one feels, reverse their course and shine forth from the child as they do upon her. To measure the art of a master by arbitrary rules were to conceive Shelley referring to his book of grammar or Swinburne restricting his erotic Muse to the nice dictates of bourgeois morality.

Another picture shows a young woman of the feline type, garbed in a coat of leopard skin. By some almost uncanny art, light, and pose, and expression have been combined to give this pretty girl the grace and the gentleness as well as the latent ferocity of the animal whose skin she wears. It is masterly. • Permission not having been secured, these particular examples may not be reproduced herewith. Should the lady just referred to chance to read this, I fear she might feel some resentment toward Strauss and myself, although I cannot see why she should. The gentleness of woman has been extolled until she elays as too much sweetness will. Men have been complimented as being lion-like. Why should any woman resent being made to similitude a tigress? The tiger is neither more treacherous nor less brave than the lion,—and she is a deal handsomer. But this is wandering. And such deviation is a sure sign that the writer should be closing. Ergo, I shall close. The deal I have left unsaid can better be expressed by the pictures appended, to appear without captions.

PHOTOGRAPHING POORLY LIGHTED INTERIORS

The opportunity being present, I avail myself thereof to thank J. C. Strauss, of Saint Louis, for his many courtesies to me, none of which were so much advanced to me individually as to the whole fraternity of photographic enthusiasts in the name of whom I dare take the liberty of again thanking him. In other places, other writers, better skilled than I, have analyzed his work and eulogized him, but just now it occurs to me that none have summarized the man himself. Let me try: Strauss,—Artist, Gentleman, and Good Fellow.



Photographing Poorly Lighted Interiors

By Wilhelm Westman



With Illustrations by the Author and M. L. Bailey

The commercial photographer is often confronted with poorly or unevenly lighted interiors, and he frequently has to deal with such objects as vault fronts and the like, where, when the door is swung open to show the interior arrangement, one portion of the subject will be brightly lighted, while another is in the



"A VERY DIFFICULT INTERIOR MADE WITH THE NITROGEN LAMP"—This interior and its furnishings are in brown, the carpet green and the flowers mainly yellow. This, made at night, was given thirty minutes, the longest exposure I have ever given such a subject, fifteen minutes being usually the limit. The reader can see that the use of the nitrogen lamp conduces to a most gratifying rendition of color values.

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deepest shadow. A proposal to photograph it by means of a flash not infrequently brings forth a protest based upon the objectionable smoke and odor resulting therefrom. For some time I have been securing the most successful results in this class of work by using one of the new one thousand watt nitrogen tungsten lamps in a large, bell-shaped, opaque reflector, such as is furnished with them at a slight additional cost. This last is supplied with a set of holes for ventilation and these should be covered.

My camera is an 8x10 on which I use a No. 3 Zeiss Protar, Series V, which gives me an extremely wide angle, as it has a focal length of only about five and one-half inches. Setting this up and getting the correct focus and arrangement, I next connect up my lamp in its reflector by plugging into a nearby socket with a generous piece of extension cord. A number of ten and fifteen ampere fuse plugs, both of the screw-in and cartridge types, for both direct and alternating current, are always carried, as one sometimes experiences difficulty by reason of those in general use being six to eight amperes, while the thousand-watt lamp consumes about ten amperes. It must not be forgotten that the illuminant is to be a special type of lamp calling for a somewhat higher current flow than does the ordinary domestic-sized incandescent, namely, ten amperes, more or less, a potential of one hundred to one hundred and twenty-five volts. Underwriters' rules are made and provided to insure safety and they should not be entirely ignored. The local electric light people can be consulted before undertaking to use a heavier fuse and plugging in a lamp requiring more current than the house wiring ordinarily uses. This is not an attempt to scare the novice; although guns are dangerous when used without understanding, one does not have to know all about gun manufacture in order to avoid gunshot wounds. But it might not be deemed wise to employ a lamp of this type in the absence of positive knowledge as to its effect under existing circuit conditions.

With all in readiness and the lens stopped down to f-32 in order to fully cover this large plate and give necessary depth of focus, I open the shutter and then walk backward and forward in a zigzag course in front of the camera, directing the light systematically over the entire subject, giving particular attention to the darker portions. In reality, one uses the stream of light thrown by the reflector much as he would use a brush in applying paint; going over the darker portions several times, giving the lighter portions little or no attention, depending upon the degree of other illumination that they receive. I am behind the reflector and consequently not in the light, and my zigzag course in front of the lens does not bring me to the same point too often or for too long a time. Consequently, there is no evidence of either the lamp or myself in the finished print. In throwing the light on a polished surface, it must be remembered that light is reflected at the same angle at which it strikes the object and an angle of reflection that will enter the lens must be avoided. By always playing the light on the side of the view opposite that on which one is standing, all danger is avoided.

One can, of course, use the light from a position outside of the field of the lens, but I find it more satisfactory to bring the light closer to the object, and by moving from side to side secure more even illumination. By walking back-

PHOTOGRAPHING POORLY LIGHTED INTERIORS



TWO INTERIORS MADE AS ADVISED

By M. L. BAILEY

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wards and forwards as suggested, one can cover the entire area of the room in a systematic manner and assure perfectly even illumination of the most contrasty and unevenly lighted interiors.

Owing to the large amount of yellow in the light, it is quite important that an orthochromatic plate be used, and in my own practice I have found the Hammer Orthochromatic double-coated to give results in the way of color rendition that seem to be equal to work done with daylight and the use of a color filter. Working as I do, and with the stop advised, f-32, I find that on fair-sized interiors with light walls and furnishings, from eight to ten minutes' exposure gives excellent negatives, while larger and darker furnished interiors require more time, although I have never exceeded an exposure of fifteen minutes, this last being given on a particularly dark interior in which mahogany furniture and a very dark red carpet were prominent features. This plan is an excellent one for home interiors, and particularly where there are windows to contend with. In the latter case, by using a developer weak in carbonate, one can avoid all signs of halation.

My own favorite developer, one particularly adapted to the avoidance of halation, is compounded as follows:

A: Water	20 ounces
Metabisulphite of potassium.....	20 grains
Bromide of potassium.....	10 grains
Metol	60 grains
Pyro	1 ounce
B: Water	20 ounces
Sulphite of soda.....	1½ ounces
C: Water	20 ounces
Carbonate of soda.....	1 ounce

For a normal developer, take one ounce of each of the three above solutions and add eight ounces of water. For double-coated plates use double the amount of water.

To develop for the avoidance of halation start with one ounce each of A and B and only one drachm of the C or carbonate solution, to the required amount of water. It may be necessary to add more of the carbonate solution, a drachm at a time, as development proceeds, but an effort should be made to bring out the detail in the shadows with as little carbonate as one can use. Finishing with the full amount of carbonate added, even if applied for only a minute or two, will give the necessary snap to make the negative a good printer.

The reproductions shown herewith will give the reader an excellent idea of the utility of this method, particularly when it is more convenient or desirable to work at night; and as these pictures are not selected ones, but simply examples that happen to be at hand, the average worker will find no trouble in doing fully as well if not better in his own work.

Without regard to what your vocation may be—whether you drive a truck or build suspension bridges—your vocational success will be governed almost entirely by your enthusiasm.—*Modern Methods.*



The Technique of Photo Pastel

By H. D'Arcy Power, M. D.



With Illustrations by the Author

EDITOR'S NOTE: *In an editorial in our November last issue, we said, in commenting upon a noteworthy exhibition of pictures by Dr. Power: "These pictures, remarkable for their wonderful atmosphere and their artistic beauty resulting from a combination of the fine textural quality of the photograph with the charmingly soft color quality so characteristic of pastel work, have a charm that appeals most strongly"; adding that an article describing the method employed in their production was in preparation for an early issue. The promised article follows and our only regret is that it is impossible for us to place color reproductions of some of this work before our readers in order that they might judge of its beauty.*

In accordance with a promise made at that time, I propose to give, in this article, the details of the technic employed in the production of the pictures in full color exhibited during the month of November at Paul Elder's Gallery in this city. That the reader may have a better understanding of the aim or motive behind the work, let me quote from the announcement of the exhibition: "The works here exhibited are the product of a special technique aiming at the complete personal control of the photographic image and the use of color according to the desires of the artist. How far success has attended this effort is left to public judgment. No claim is made for simplicity. A knowledge of the principles underlying all graphic expression is as necessary here as in painting by the brush—and good technique can only be obtained by practice; but the exhibitor does maintain that the effort is worth while. That the camera can be used as servant instead of master; that the product has a quality 'sui generis,' and that truth, beauty and individuality can be wedded if the necessary skill be acquired." While not at all necessary for a full understanding of the nature and aim of the process here given, the reader might desire to acquaint himself with my previous contributions to photographic literature on the subject of color prints. These are to be found in the 1909 issue of the "American Annual of Photography," wherein I gave the details for effecting a complete control, including the elimination of undesired objects, in bromide prints. This was followed by my work in producing bromide tints in two tertiary colors; namely, flesh-ocher and blue-gray, an account of which was given in the May issue of the *Photo Era* and the October number of *CAMERA CRAFT*, 1909. My most recent contribution occurs in this year's issue of the "American Annual of Photography," wherein I have considered, from both the theoretical and the practical sides, the subject of color in pictorial photography together with the basic principles of the method herein described.

To briefly summarize the ideas underlying these papers, I will begin by stating that I have no faith in the production of works of art by any purely mechanical photographic process; least of all the production of pictures by the

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direct transmutation of colored images to paper. I therefore look to the utilization of photography as an instrument of the fine arts only in so far as it is capable of being made, by direct control, responsive to the artist's intentions and ideals. We may therefore lay to one side all questions relating to the legitimacy of manipulation of the photographic image, inasmuch as it can be easily shown that such images are never true either to nature or to the principles of art. Secondly, it is claimed that only the highest and most satisfying results in graphic representation are attained when all the elements of a perfect picture, namely, line, mass, color contrast and color harmony, are present. An attempt to realize the first of these three elements of a picture was embodied in the two-color bromides, many examples of which have been frequently exhibited in this city. The technique of these I developed some seven years ago and fully described it in the October, 1909, issue of *CAMERA CRAFT*. By this means I obtained pictures in which the effect of color contrast was so perfect as to cause an impression of a full palette, a sense of reality not attained by any monochrome print.

A little over a year ago it occurred to me that the pictures so obtained, consisting as they do of an image made up of varying areas of red and blue tertiaries, were practically the same as the preliminary paintings made by artists in oil color before building up the final picture by an overlay of the pigments, and I was led to experiment as to whether this could not be used in the same manner. Granting the possession of a print on bromide paper, in two colors as described, it seemed quite possible to superimpose the modifying colors, either in stains, water colors, transparent oils or pastels. The last form was selected in preference to the others, for several reasons. It could be used so lightly as to leave unchanged the texture of the photographic image; it is devoid of the unpleasant artificiality of aniline colors; it possesses the power of adhesion to the surface to a superior degree than water color; while, on the other hand, it can be built up so as to overlie, if necessary, either false values or undesired drawing. In addition, the character of the surface produced assimilates with that of bromide paper and gives no sense whatever of a blending of media. The results are therefore free from the objection that can be lodged against those achieved by many art methods of a mixed nature.

The actual production of a picture in full color demands: First, a negative in which the values are reasonably correct; second, a bromide enlargement having a surface capable of holding pastel; third, a changing of all parts of the photographic image which are later to be shown, as reds, oranges, or yellows, into silver sulphide; fourth, the pigmentation with pastel, and lastly, the fixing of the pastel surface. We will deal with these seriatim.

Correct values can only be obtained by the use of panchromatic plates, and for all color work I strongly advise the use of such, my own practice being to employ a Wratten or Wainwright Panchromatic with a three-times screen. From the negative so produced, an enlargement is made on bromide paper, which often appears unpleasantly flat as monochrome, but will work out all right when the contrasting colors are superimposed. The paper on which the enlargement is to be made must be practically devoid of a gelatine-like surface. My own preference is for the popular P. M. C. No. 3, either soft or hard according

THE TECHNIQUE OF PHOTO PASTEL

to the nature of the negative. The prints so made should be treated with some care in the wash water and in other manipulations so as to avoid creasing or breaking the surface. After being thoroughly fixed and washed, they should be surface dried between blotting papers and the portions of the image to be changed into sulphide gone over with a camel's or sable's hair brush charged with a very little (in fact, an almost dry brush) of the bleach. This last is composed of about equal parts of a ten per cent solution of potassium ferricyanide and a five per cent solution of potassium bromide. Following the outlines of the warm tones, the image bleaches as the brush passes over the surface. One should carefully consider the final picture and bleach only those parts which are ultimately to be in warm colors; and care must be given to the nature of the area to be bleached. For example, in dealing with small and sharply defined masses, such as hair in portraiture or fine leaves in landscape, the brush should be nearly dry so as not to overrun the line, and, in fact, it is better always to work a little inside, permitting it to spread towards the edge. On the other hand, when dealing with large diffused masses, such as clouds, it is well to submerge the print under water, carrying the brush containing the bleaching fluid close to, but not always onto the print.

If at any point it is desirable to unite the cold and warm areas by a color halftone, the effect can readily be produced by applying the bleach as a fine stipple. Then wash the print for five minutes in running water; and, if at any point you have bleached beyond the line intended, charge your brush with a little developer and locally redevelop to the desired extent, wash, and place the print in the usual one per cent sulphide of soda bath for three minutes and then wash until free from odor. The bleached parts are now brown, the rest black silver. The print is next immersed in a bath consisting of gold, one grain; ammonium sulpho-cyanide, ten grains; water, twenty ounces. In this the silver becomes blue-black and the brown sulphide passes through a series of tints to red chalk. The print is to be taken out and washed when the required color is obtained. If it is desired to carry the change further at one point than at another, the varying degrees are easily obtained by local swabbing with absorbent cotton charged with the gold bath. Finally, let me point out to you that, if the values, or even the outlines, of your bromide print are defective, you should modify them before proceeding to make your color applications.

The result, if the work is rightly done, is a suitable picture in two colors; and, let me here say that the production of such a picture is absolutely essential to final success; for, while it is possible to superimpose pastel upon an untreated bromide print, the results are never satisfactory. This print is next to be treated with pastel, to the end of securing the effect of a fully painted picture. Before considering the technique of so doing, let us say a word as to the materials required. There are pastels and pastels. The best pastels are made in France and come in boxes consisting of sticks of the pure color worked up with a little gum water to various grades of dilution with white pigment. In the best brand, namely, Girault's, eight tints are supplied. Furthermore, Girault designates his pastel colors by the same names as those given the usual oil or water colors; thus you may have carmine lake, Naples yellow, red ocher, and so on,

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with their various dilutions. Other makers, such as Weber, employ a more general nomenclature: gray-blue, light yellow, orange, and so on. Again, pastels are divided into classes according to the degree of hardness they possess. Taking Weber's list, which I can commend, we have background pastels which are very soft and can be used for many things besides backgrounds; the soft or regular pastels, the half-hard pastels, which are extremely useful for giving forceful shading, and hard pastels that have a very limited use, mainly in giving special accents. As suggested, my own preference is for Girault's, and for



A STRAIGHT ENLARGEMENT FROM A HAND
CAMERA NEGATIVE

serious work one can hardly have too large a variety of tints in varying degrees of hardness. My own palette probably includes some three hundred colors and tints. However, a great deal of very good work can be done with a limited palette, and Weber, of Philadelphia, puts up assorted boxes of the various grades of hardness, running from fifty to one hundred, according to the price, and I can recommend these very highly for general work.

Besides a sufficient number of pastels, there is need for means of applying the material. Works on pastel painting give information which is chiefly derived from a technique required in using pastels on special pastel paper. This does not apply to the conditions found in working on a bromide emulsion surface, and I have had to learn by practical experiment the points that I here give. I

would advise the use of the following material: Some pads of blotting paper on which to try out colors and clean stumps; a collection of paper stumps called tortillons, which can be obtained for one dollar a gross, and a few leather as well as three or four felt stumps. With these one can proceed to the actual laying on of the color, but first and foremost the worker should carefully consider the color scheme he intends to employ, and form, as nearly as he is able, a picture in his mind toward which he intends to work. Necessarily, to do this with any effectiveness requires some knowledge of the principles underlying all color in the making of pictures, some idea of the relation, not only in which they occur

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in nature, but the relations which are necessary to give rise to pleasing effects. The worker should have a clear grasp of the fact that colors, as we see them in nature, do not, when transmitted to paper, give rise to the same impressions as do the natural objects. It will be found that the great masses of color constituting the varying planes of a landscape, require, when shown on paper, to be greatly intensified in order to give rise in the mind to a similar effect. Once the artist has built up his concept of what the final picture is to be, he can then proceed to first lay in the colors of the large masses.

The average tint of the foreground, the main color elements of the mid-distance and the tints of the sky should be applied by means of cotton-wool stumps made by twisting a piece of cotton-wool into a small pad, rubbing the selected pastel thereon and then using an extremely light, circular movement in applying it to the paper. It is best to employ the lightest tints first, leaving stronger ones to follow. There is no need, at this stage, to seek extreme accuracy in the limiting of various color areas. These are secured later as the stronger colors are put in. Having secured a general impression of the color distribution, the main large objects, such as buildings, tree trunks or draperies, are next laid in, employing for that purpose the paper stumps, or, where special blending is required, the leather stump.



Lastly, special masses of color, such as flowers, the lips in portraiture, and the edges of clouds, should be made to grow in purity and be given accent.

It will sometimes happen that the subject contains many closely placed contrasting colors; for example, the shadows underlying leaves, or branches, shadows which are often purple or violet in tint in contrast with possibly bright green above. It is generally better to first put in each shadow as an individual speck of pastel dabbed on by means of a small paper stump. Then do likewise with the greens of the leaf, and then, by means of a piece of cotton-wool compressed until it gives a small hard surface, bring about the union of shadow and light

THE SAME SUBJECT AS A PHOTO-PASTEL—
COPIED ON A PANCHROMATIC PLATE TO GET AN
APPROXIMATION OF COLOR VALUES

by short dabbing movements with no horizontal excursions. When the coloring of the picture has been completed in this way, it will often be necessary to blend masses that may be heavy in tone and difficult to unite. In such cases the felt stump will be found invaluable inasmuch as it has the ability to pick up and hold the superfluous pigment. Again, it is often useful to be able to obtain the effects of strongly reflected light by scrumbling pastel, which, however, had better be deferred until after fixation of the image. Very often a transparent film of color over a large area will give excellent results.

Having obtained the desired effect, the picture should be fixed. Numerous methods have been devised for fixing pastel, but most of them are failures. The method I employ gives relatively good results; it does not affect the tint of the picture and gives sufficient fixation to hold the color so long as the surface is not rubbed too harshly. I place the pigmented bromide face downwards on a sheet of blotting paper, taking care that the edges are held in close approximation, and then thoroughly wet the back with a sponge until the paper stretches. The blotting paper prevents the wetting of the pigmented side. A piece of cardboard is, in the meanwhile, pasted with stiff paste, the pigmented bromide carefully placed thereon, covered with a sheet of thin celluloid and carefully rubbed down. So long as the print is held steady, none of the pigment will come off and the moisture penetrating through the paper to its gelatinized surface will bring about the firm adhesion thereto of almost all the color. In most cases this is enough. If, however, the image has received at any point a very large amount of pastel, or if active scrumbling has been done, it may be necessary to fix further by spraying the parts with a solution of celluloid in amyl acetate. This is best done by holding the print horizontally over an oil atomizer containing the solution at such a distance that the larger drops of fluid do not reach its surface.

Leaving out of question the point as to whether my ability as an artist has permitted me to produce things worth doing, I have no hesitation in stating that if such is not the case, it is not the fault of the process. Every advantage which photography can give,—correctness of line, drawing, beauty of texture, and subtlety of gradation,—all these can be retained to perfection, while the ability to modify both form and values and the power to express all the subtleties of color which the artist can see or imagine, are absolutely within his control. It is along such lines as these that I look for the perpetuation of photography as a fine art rather than through any success in producing color plates or color-recording papers. These last, even if found absolutely successful, I cannot believe will ever have any serious art value. And finally, I would say to the reader that, if the requirements here laid down seem difficult of attainment and the technique demanding too much time and attention, it should be remembered that no art work of any value can be produced except by effort and the expenditure of time and thought. However, everything has a beginning, and pleasing yet simple effects are not difficult to produce. By carefully choosing his subject, the beginner can create pictures of great beauty, pictures that will tax neither his time nor his material.

A Wire-Frame View Finder

By C. A. Harris



With Illustrations by the Author



AT THE WHARF

This is being done with the idea of calling attention to the possibilities, those certain advantages in the hands of careful workers in the craft, of the wire-frame view finder. Each can, to an extent, make the appliance individual and the interest is sustained and absorbing, because the principles will have to be adapted to one's own particular camera. In doing this, one will be able to exercise his inventive genius. An avenue to experimental pleasure in the construction in use will be afforded if the maker's experience agrees with mine.

Besides, he will like the resultant finder better than the much-used ones of the ordinary variety, and infinitely better than the small reflecting finders supplied with hand cameras.

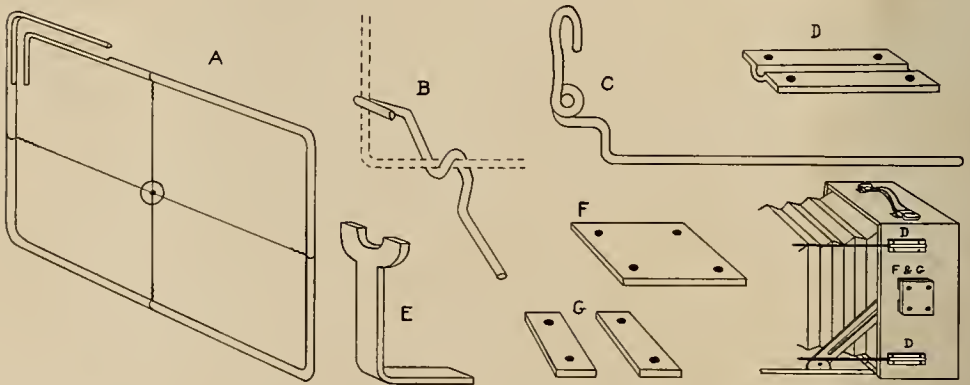
If one belongs to that class which likes to compose a given view on the ground glass before exposure, this wire-frame finder will be particularly satisfying. The frame, as one looks through it, simply marks a section out of the landscape, a section which matches exactly what would appear on the ground glass were it being used, and hence he sees precisely the same as he would were he looking at the ground-glass image. However, with this finder there is the advantage that one sees the view right side up as well as in all its color, shape, and size, so that one even secures benefits such as are afforded by the reflecting mirror of the Graflex type. One stands erect with the camera on the level of the eyes; therefore the view is more correct, more as one usually sees it, and the fault of too much foreground, secured when one bends over a camera held waist high, is avoided. With this finder in position, one sees not only the view proper, which is to be recorded upon the sensitive plate, but everything surrounding it. One watches, perhaps, the ever-changing clouds, the approach of a train, horse, automobile or aeroplane, the oncoming of a breaker (sometimes

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a "record breaker") upon the beach; and doing so, one more easily prepares to expose upon these moving objects at exactly the right moment.

Now this is for folk who will use the appliance with the same intelligence and care that should be devoted to other photographic methods and processes. It is not for the haphazard, guesswork individual. Perhaps this is the reason why it has not been used more generally. With this much said, let us proceed on our journey of particulars, as the stereopticon orator might remark. We shall find the construction in itself quite simple, and will appreciate also that it is desirable to have something that shall be contained within the camera, something not necessitating the carrying of a separate parcel, as my first effort did. It is well to begin by seeing what facilities the camera affords for accommodating the wire frame. I found there was space in the recess between the ground glass and the door in the back of my camera to accommodate the frame proper. The two struts and the upright sight bar I put in a small manilla envelope, secured by a rubber band, and when the bellows are folded this is tucked in beside the lens. One should look into this first, because it may decide the exact size of the frame. This remembered and considered in the making of the finder, the balance is detail.

First in importance is the centering; second, the size of the frame and its distance from the eye when the latter is at the plane of the sight bar, this distance regulating the amount of view included within the limits of the wire frame. As to the last, the ideal size is one that, when in position on the camera, will be an agreeable or comfortable distance from the eyes; that is, so there will be no blur. Of course, there are a great many kinds of eyes. One had best experiment, beginning with, say, $3\frac{1}{2} \times 4\frac{1}{4}$. That was found to be the more acceptable size in my own case. If the dimensions differ from those of the plate used, simply remember to get the right proportions by altering one of the



dimensions. An article on page 365 of the September issue shows method of retaining the proportions in altering the size of an oblong. A finder of the above size would be just suitable for a $6\frac{1}{2} \times 8\frac{1}{2}$, but would have to be made a quarter of an inch narrower for a 5×7 . With the vest-pocket article of postage-stamp size, however, I foresee that one would be obliged to carry the finder in a separate parcel.

A WIRE-FRAME VIEW FINDER



TWO TYPICAL CALIFORNIA LANDSCAPES

Proceeding to the frame, this is made of wire sufficiently rigid to retain the shape, but one will find the lighter the wire the easier to manipulate. Brass wire gives a better effect and matches the other metal parts of some cameras. The sketch A shows the joint made at a corner by overlapping the two ends after flattening both with a file where they overlap and finishing by winding with wire thread. The center of the frame is now marked with a brass disc, one-quarter inch in diameter. In the center of this disc make a hole just sufficient to admit the four wire threads which are extended from this point to the center of each side of the frame. File slight channels at the exact center of each side of the frame, which will hold and prevent the attached wire thread from slipping. This completes the frame proper.

We are supposed to be considering a hand camera of the folding pattern, one using an oblong plate. We will find that the nearer our frame is kept to an imaginary line drawn through the center of another such line extending the axis of the lens, the better, so this finder is best fitted to the long side of the box; that is, to the top when a horizontal view is on and from the side when a vertical one is being made. The frame completed, two struts, one shown at both D and C, are next in order. The one not shown of course twists in the opposite direction. As the drawing B makes plain, these engage the two lower corners



WHERE FIELDS ARE FAIR AND SKIES ARE BLUE

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of the frame, and when in position on the camera, hold it securely in position. These detach themselves when slid towards their respective ends of the frame ready for stowing away. The long, straight ends are inserted into sockets, D in the sketch, made of tin, bent around the wire and are fastened inside the camera box as shown by dotted lines on the camera box side. This gives us the frame supported by the wire struts attached to the camera.

It will also be necessary to provide a vertical sight-bar or upright as shown at E. This and the slot-forming pieces, F and G, for attaching it to the camera, are cut from the brass of an extra wide picture hook. If some different material is used, at least have each and all made from the same stuff. The diameter of the semi-circle at the top of this sight-bar can be just a trifle smaller than one-half that of the circular disc in the center of the frame. The perspective makes this semi-circle agree with the lower half of the circle at the center of the frame. These two parts, the center of frame and the top of the sight-bar, must be more substantial than those used with the sight-finder of the lens pattern, because in looking against the light they would blur and be impractical if made too small. The slot for the sight-bar should be fastened on the outside of the same side of the camera that carries the two sockets for the struts on its inner side. It is made by cutting out two pieces of brass, say $\frac{7}{8} \times \frac{3}{4}$ of an inch in size. Cut one piece in three parts and remove the central strip, as shown at G. Place the plate, F, on top and drill the holes.

In the matter of adjustment, to secure correct centering, a line from the top of the sight-bar to the center of the frame must be as nearly parallel as possible to a line from the center of the ground glass to the center of the lens. Also, the central points of the frame and sight-bar must be perpendicularly over the line between the ground glass and lens centers and the several parts must be fashioned accordingly. Owing to the axis of these two parallel lines, there is a slightly different register for very short focal distances, say six or seven feet. In practice, one must remember this and make a little allowance. Personally, I have never had occasion to do this even when I wished to work at such short distances.

Everything ready, one has only to make the final adjustment upon the distance. Focus and locate on the ground glass such objects as intercept the margins and corners and then place the eye in that position behind the camera that it is expected to maintain in the future. This latter is important. I find it best to rest my cheek against the camera, or rather, I place the camera against my cheek, bringing it opposite and but a short distance back of the sight-bar. This insures that the eye is always the same distance from the frame. One can then slide the frame to the point where it includes a view corresponding with that on the ground glass. While it can be done, it is hardly necessary to mark all the distances usually indicated on the focusing scale. However, one might start with the infinity point, and as that is the point where the frame is nearest the eye, it will be marked by bending the wire struts at the point where they meet the edge of the box when jammed home.

There is no perceptible difference in the centering or in the amount of the

A WIRE-FRAME VIEW FINDER



ALONG THE SANDS OF SUMMER SEAS

view which the frame encloses, from this point of infinity down to about the twenty-five foot point. Consequently, if one has, in addition to infinity, a guide for the fifteen-foot point and another which will show the amount included at the six or seven foot point, he should get along very nicely. I have only marked mine down to fifteen. These short-distance points can be marked by filing a slight channel in the wire struts and tying a piece of black silk thread around at that point. In use, the struts are pulled out until their required markings are on a line with the edge of the box. That's all.

That thing which I understand by real art is the expression by man of his pleasure in labor. I do not believe he can be happy in his labor without expressing that happiness; and especially is this so when he is at work at anything in which he specially excels.—WILLIAM MORRIS.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

ECONOMY IN USING RED PRUSSATE: Using considerable ferricyanide of potassium, or red prussiate, as it is called, in making up a straw-colored solution for reducing, I find it time-saving and economical to throw several crystals into a graduate containing the desired amount of water, rinse them around until the proper color is secured and then fish them out and place aside to drain and dry for the next time they are required.—J. B. W., Ohio.

PLATE MARK EFFECTS ON MOUNTS OR PRINTS: As I do not recall having seen anything relating to the home-made device for producing the plate mark or counter-sunk effects on mounts or prints that are so effective as a variation from the usual finish, I am sending a sketch showing the one I use in my own work. This frame is used in connection with an impression block of hardwood and a cardboard cut-out to be used underneath the mount or print to be counter-sunk.

SEPIAS BY THE SULPHIDE PROCESS: In using the sulphide process, I find that I get a much richer brown and avoid the objectionable yellowish tone by first immersing the prints in the sulphide solution for one minute, then washing until the print does not feel slippery, finally bleaching and developing in the usual way. Those who will try this plan will be pleased with the results, I feel quite sure, as several of my friends have used this method with the most satisfactory results.—S. T. D., Pennsylvania.

MENDING HARD RUBBER TRAYS: Hard rubber trays are quite expensive, and, when broken or cracked, are well worth the trouble of mending. The liquid rubber cement used by bicyclists will be found excellent for the purpose. The smooth edges of the rubber at both sides of the crack should be roughened up by scraping or filing; then apply two coats of the cement, according to directions given on the label, to the edges of the crack or break proper, press together by using a weight or a winding cord to hold in place for twenty-four hours. Then apply a coating of the cement to the roughened surfaces of both sides of the tray for a distance of about three-eighths of an inch both sides of the crack.—J. B. W., Ohio.

REMOVING ABRASION MARKS ON WHITE BORDERS: I print a great many post cards from 4x5 negatives, necessitating a blank space at the end of the card. Occasionally these white spaces are defaced by abrasion marks, which I remove by first dipping the print in the acid-hypo bath for a minute or two and then rubbing the mark lightly with a crystal of red prussiate about the size of an ordinary coat button. It is best to do this with the card on an inclined surface so that there will be no danger of the solution formed

PARAGRAPH PHOTOGRAPHIC

running onto the print itself and damaging it. When the surface looks clear yellow and white, I hold the card under the tap until the yellow tint is removed, completing the washing in running water in a tray to remove the hypo. Should the yellow color linger after a good washing, a re-immersion in the acid-hypo bath and repeated washing will remove it.—J. B. W., Ohio.

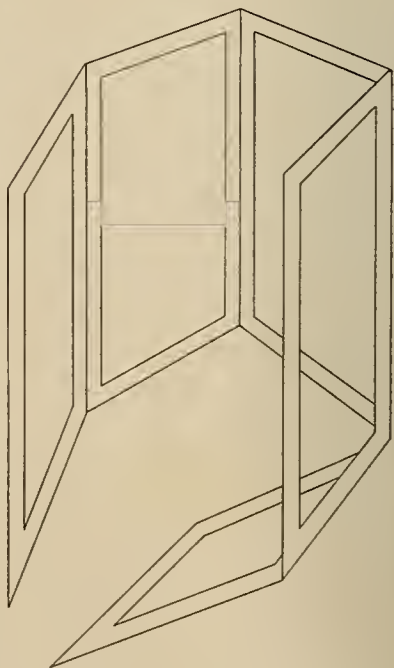
CLEANING SOILED ENLARGEMENTS: Hazalene Cream, obtainable through any dealer carrying Burroughs, Wellcome & Company's excellent line of photographic chemicals, is just the thing for removing the tarnish or silver-surfacing so often found on old bromide prints that are sometimes brought to the photographer to be copied. Quite frequently a customer will want a duplicate or copy of a large picture that he reports is badly faded, when the difficulty is due, not to fading, but to a degrading of the high lights of the picture by this silver-like metallic staining of the surface. Even when there is actual fading, once the surface is cleared by rubbing over with this preparation on a tuft of cotton, there will be found enough of an image standing out clear and clean to suffice for the making of a good copy negative if a little care is employed.—J. K. L., Missouri.

HANDLING STRONG CONTRASTS: Another worker recently gave me a practical demonstration that helps me over what has heretofore been a serious difficulty, namely, the securing of detail in white dresses and drapery when photographed in connection with dark objects. He roughly draped a white sheet about my own noble frame and posed me in the shade of the house with a background of vines in still deeper shadow. A very full exposure was given, one long enough to secure detail in the dark leaves behind. Then he proceeded to develop the negative with a solution made up by diluting the normal developer several times and then adding a little more of the alkali. It took a little longer for the image to appear, but yet not long on account of the full exposure. As all detail came out, the plate was transferred to a full-strength developer, where it was watched closely to avoid blocking of the high lights, only a slight increase of density being required. As all detail was out, this increase of density seemed to distribute itself over all parts of the image instead of in the high lights only, as would have been the case had the plate been started in a normal developer.—J. K. L., Washington.

AN ALBUM THAT IS DIFFERENT: For the housing of my prints I have been carving and putting together an album that is somewhat different from the ordinary one, and, in my eyes, an album that has advantages not found in those regularly sold. The particular departure from the usual form lies in the employment of two or more shades of cover paper for the leaves, the different leaves being cut different sizes so that some of the prints are given the effect of multiple mounting. This means that the leaves should be arranged in twos and threes, with the smaller leaf at the top. These smaller leaves carry the small prints, while the larger ones can be used for larger prints, remembering, of course, that the print must not be larger than the album leaf immediately above. An album so arranged with leaves of different shades and sizes, not only permits of giving some of the prints the advantage of multiple mounting,

but it permits one to exercise his taste and knowledge in trimming away undesirable portions of some of his pictures while yet being able to proportion the shape and size of the album leaves thereto. The number of each shade or size of leaf in each album will depend upon the relative number of large and small prints. Another advantage lies in the opportunity given one for exercising his taste in the matter of arrangement, something that is sadly lacking in the commercial style of album. In making up this or any other form of album, it is a good plan to procure some bookbinders' linen or similar cloth, and with good paste or glue attach a double strip to the end of each of the leaves, inserting in the fold a strip of cover paper similar in thickness to the leaves themselves; although the leaves be of various dimensions, the hinge strips and that portion of the linen of the smaller leaves which is included in the binding, and therefore out of sight when the book is finished, should all be of the same length as the largest leaves. This results in making uniform that part of the back where it is stitched. These strips should be of sufficient width to form a hinge that will allow the leaves to open flat after the fashion of the ordinary loose-leaf system book. This, of course, is some little trouble, but the improvement is so great that the extra work is quite justifiable.—C. A. H., California.

A DARK-ROOM UTILITY: The space in my dark-room is limited and yet the sink is one of most generous proportions. To secure more working room, I had built a long board or bench to fit over this sink, and on this last I did all my developing. I also used this same bench for mounting and other work that of course needed more light. Over the sink there is an electric light bracket, and it was my practice to use two globes, an ordinary white one and one that had been dipped in red fluid, alternating them according to the work in hand. The constant changing caused the red coating of the latter to peel and crack off and having the two globes always handy was not so convenient as it sounds. The diagram herewith shows the framework of an oblong box, before being folded into shape, that I cut from one piece of tin, the openings in the sides being covered with postoffice paper and the top or open end being fitted with a loop cord by which to hang it over the bracket or on a convenient nail when not in use. With this the tungsten lamp remains in place at all times and the continual changing is avoided. When I am ready to do developing, I simply slip the box up over the light and slip the cord over the bracket to hold it in place. When I want to do mounting or the like, I simply take off the box and hang it on a convenient nail.—F. H. K., Wisconsin.



CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 2

That Stevens Bill

The Standard Price Bill, introduced in the House last year by Representative Stevens, of New Hampshire, was reintroduced, without change or amendment, by Congressman Ayres, of Kansas, December fourteenth last. The wide publicity given this measure under the name of the Stevens Bill will no doubt cause it to continue to be known as such, although its author is no longer a federal officer, but one of the counsel to the Federal Trade Commission. However, Representative Ayres, who reintroduced the bill, is a worthy champion of any legislation that will make for the prevention of unfair competition and dishonest advertising, alike detrimental to both the independent merchant and the consumer. While a large number of members of both the House and Senate have promised their support, the man favoring this desirable legislation should not neglect to write his Representative and Senator, asking their support for the bill when it comes up at the next session of Congress.

We Apologize

On page 492 of our December issue, speaking of Mount Lassen, Mr. Mullen said: "This is the only active volcano in the United States." A prompt protest came, by reason of the distance too late for our January issue, from A. P. Taylor, Secretary and Director of the Hawaii Promotion Committee, calling attention to the well-known fact that the Volcano of Kilauea is always active; and, of course, the Hawaiian Islands are as much a part of the Great American Republic as California or New York. Neither Mr. Mullen nor ourselves had any intention of denying the existence of one of the real wonders of the world, and we certainly realize Hawaii's importance as the youngest territory of the United States. We feel quite sure that every reader understood just what Mr. Mullen meant by his statement; and, that his qualifying it by excepting the Territory of Hawaii would not have added one iota to the renown of Kilauea Volcano, the beautiful thirty-two mile road to the Volcano House, or the drive from the latter around the basin and down through a break in the wall upon the floor of lava to the auto park from which a pathway takes one to the edge of the crater pit, where, two hundred feet below, one sees the rolling, sizzling, fountaining lake of molten lava.

Of Interest To Pictorialists

In a recent issue there was announced the 1916 Pittsburg Salon, to be held in the Carnegie Art Gallery next March.

The Photographic Section of the Academy of Fine Arts has for several years conducted a Salon of exceptional quality, notwithstanding the extended season of pictorial depression which apparently discouraged many less strenuous societies.

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Unmindful of the adverse conditions, they have succeeded in hanging at each of the previous exhibitions, between two and three hundred very creditable pictures, which in itself is a most commendable performance, to say nothing of the value of preserved continuity.

The displays of 1914-1915 were principally invitation affairs and any appearance of inconsistency was due entirely to the judgeless acceptance of exhibits.

However, the Pittsburg Salon allowed nothing to escape their observing eyes and such weaknesses as were noticed in the shows of the past have been carefully guarded against, and the 1916 Salon will unquestionably equal in quality any photographic exhibition ever held in the United States.

We feel justified in making this prediction after examining the list of Salon members, the majority of whom are well-known pictorialists, while great things are expected from the younger workers who have in the two previous shows merited special recognition.

It is sincerely hoped that the enterprise evidenced by the Pittsburg Society will find full appreciation among our photographers and that the entries for the Salon will be such that a continuation of the event will be assured.

When it is considered that today there is positively no permanent institution devoted to photography in the United States, such as the Royal Exhibition or the London Salon in England, where the American pictorialist may send his work, and realizing the great benefit which such a "clearing house" would afford the artist in photography, it is inconceivable that anything but the most loyal support will be extended to the Salon in its efforts to place our country on an equality, photographically speaking, with other lands.

To be an exhibitor in the Salon is an honor well worth striving for, and to be among the number annually selected for Salon membership is a distinction which should make an irresistible appeal to the master camera worker.

Prints should be addressed: "For the Photographic Section, Academy of Science and Art, Carnegie Institute, Schenley Park, Pittsburg, Pa.," to reach there on or before February twentieth. Not more than six prints will be accepted from one exhibitor, although any number may be submitted. Prints should not be framed or glazed, but mounted on light-colored mounts with liberal margins.



A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Radiography From The Amateur Photographer's Point of View

No scientific application of the principles of photography has been of greater value to suffering humanity during the war than that of X-ray work. The camera and lens, of course, play no part in radiography, but the sensitized plate, the developable image, and the subsequent print from the negative are factors in the photographic process that are familiar to all amateurs. We have been told recently in *The Amateur Photographer* of the enterprise and activities of members of the Croydon Camera Club in instituting a regular service for dealing with the photographic side of X-ray work at the local war hospital. This excellent example has, we hear, been followed by other photographic bodies in different parts of the country, and from the numerous inquiries that reach us asking for a brief outline of the photographic side of radiography, we believe that our readers generally will be interested in a description of it.

There is no doubt that the radiographic department of our hospitals, both in this country and at our various bases in France and elsewhere, has become more and more a necessity as the war has proceeded, both as an aid to the diagnosis of fractures and disease and the localization of bullets and other foreign bodies.

The X-ray department of a hospital is under the control of one or more radiographic medical specialists, who often have under their care as well the treatment of cases with radium and electricity. These gentlemen supervise the work of their department, diagnosing the photographic plates obtained, often taking the actual radiographs in difficult or critical cases. Assistants carry out the work under this skilled supervision, such assistants in big hospitals being medical men or students, while in smaller institutions not having medical schools attached, the work is done by nurses, who are specially

trained in it and devote their whole time to it. These assistants or nurses look after the tubes and the electric motors, make the exposures, and if required do the radiographing. They develop the plates and print from them, or, as in the cases mentioned above, the members of the local photographic society do the work gratuitously.

X-ray dry plates are made specially for the work. They are coated with an emulsion very rich in silver, and are thickly coated. Each plate is prepared for exposure by putting it into a double light-proof envelope, or in certain cases into a cassette or wooden screen with an intensifying screen, a sheet of card coated with an emulsion of finely powdered barium platino-cyanide. This substance fluoresces under the influence of X-rays, and when in contact with a photographic plate shortens the exposure by about one-tenth. It makes, however, a somewhat coarser image, but it is very useful in cutting down exposures for chests, etc., which owing to breathing or movements of the body would otherwise present a blurred image.

The most satisfactory developer for X-ray work is undoubtedly metol-quinol at a temperature of sixty-five degrees Fahrenheit. It can be used several times in succession without becoming exhausted, and is clean and vigorous in its work. The plates being so thickly coated, must be well developed, as a general rule till the image is well through and visible on the back of the plate. The fixing solution lasts on an average about a week, or sometimes rather more, according to the plates dealt with. Four dishes are used; two containing water, eighty ounces each, and in each of which are dissolved hypo two pounds and metabisulphite of potassium two ounces; the other two are half the size and contain forty ounces each of the same solution. These fixing baths, when they will no longer fix, should not be thrown down the sink, but should be treated for the recovery

of the silver with which they have become charged.

Plates for X-ray work range from the humble half-plate up to the lordly 15x20 inches. The economical operator can make one half-plate do for two exposures for fingers by covering half the plate during exposure with lead rubber. For jaw cases, films cut to fit inside the mouth are used.

X-ray exposures are not easy to calculate at first. The factors governing an exposure to be considered are the current, in milli amperes, passing through the tube; the condition of the tube, whether it is hard, medium or soft; the distance of the anti-kathode from the plate, and the thickness of the portion of the body through which the rays have to pass to reach the sensitive surface of the plate. A useful scale has been worked out, using these factors as a base. With a tube in good working order, that is neither too hard nor too soft, and with the anti-kathode at a given distance, with one milli ampere passing through the tube, for a hand the factor is thirty, for a shoulder one hundred, and so on for various portions of the body. Such long exposures, however, are hardly ever given, for, with modern high tension apparatus and tubes, ten to fifteen or even more milli amperes can be passed through the tube, and with the intensifying screen instantaneous exposures of from one-fifth to one one-hundredth of a second can be made. Except in special cases, however, three to five or ten milli amperes is a good general working average, and does not try the tubes, as does the very heavy current for the instantaneous exposures.

The anti-kathode of a tube is the target which, interposed in the path of the kathode stream, produces the X-rays, and as now arranged in the vacuum tube, focuses them, enabling a sharp image to be obtained. A hard tube is one of high vacuum, a soft one is of low vacuum. Tubes harden up with use, and have to be softened by passing the current through the softening valves, with which every tube is now provided. Neither soft nor hard tubes give good pictures, and a tube requires to be coaxed into a nice "medium" condition to get the best radiographs. Reverse current ruins a tube.

The plate is secured, film side against the patient, as closely as possible against the seat of injury. When the X-ray tube is below the

patient the plate and the part to be X-rayed can be rendered immovable during exposure by means of sand bags of various sizes.

Photographic plates before and after exposure must be kept outside the X-ray room, or they will be fogged when the current is turned into the tube.

A radiographer requires a knowledge of osteology, and should study well the X-rays of normal bones. A knowledge also is very necessary of how best to handle seriously sick and injured patients without causing pain or further damage. There is much for the X-ray operator to learn, and it can only be learned by actual experience; no amount of theory can teach one the hundred and one little points that crop up during the day's work. Three months' constant practical study will give a fair working knowledge, but a year at least should be put in for training if possible. It is very interesting work, and X-ray operators are sure to be in demand more and more.—*The Amateur Photographer*.

White Tissue For Carbon Process

It is now some twenty years ago that the writer of these lines had a conversation with A. C. Braham of the Autotype Company, in which the suggestion was made that it might be possible to make a white "carbon" tissue, a tissue which would give an image in which the lights were formed by the deposit of white pigment in the gelatine, the shadows being the result of a dark colored support showing through. Such a tissue would have been of interest in several ways, though at the time any commercial applications of it were not particularly evident; and the hint thrown out casually in this way lay at the back of Mr. Braham's mind, to be followed up should time and opportunity serve.

A few days ago we had the pleasure of a visit from him, when he showed us specimens of prints made in that way, and also left with us some of the white tissue and a dark support with which to experiment.

Before dealing further with the use of the tissue, it may be well to say a little about the circumstances which led up to the suggestion of such a material. We had been trying carbon tissues of various colors on deep toned transfer paper, sepia tissue on brown paper such as is used for crayon work and similar combinations; and though these gave

A PHOTOGRAPHIC DIGEST

very promising results, there was the ever-present difficulty that the highest lights in the picture could be no lighter than the comparatively dark colored transfer paper. There was nothing to correspond to that picking out of the highest lights with white chalk which was done by the crayon worker; and so, even with a very lightly tinted support, the picture looked heavy. Those who have worked with any of the processes in which a strongly tinted paper base is used, as, for example, in the well-known Ilford "Bromona," must at times have felt the need for something of the kind, to give just that accent which the picture seems to need.

The thought arose, naturally, that this might perhaps be got over by printing a weak image in white on the transfer paper to start with, and then putting down the other picture on the top of that. The dusting-on process occurred to us as a possible means of carrying this out; and it was at this stage that the conversation with Mr. Braham took place, to which we have already referred. The subject passed out of view, other things demanding attention, but it was not lost sight of by Mr. Braham, and has now resulted in the tissue under notice.

The new carbon tissue is of a bluish white tint, and as it is the thickest part of the developed image which has to provide the high lights of the picture, it must be printed under a positive and not under a negative. Sensitizing it on a bath consisting of a plain solution of ammonium bichromate of a strength of two and a half per cent, we found it extremely sensitive. It did not take more than three or four minutes at the very outside to give a print from a fairly clear positive. The image is plainly visible, looking at that stage like a negative, not a positive, the lights in the picture being formed by the darkened product of the action of the light of the bichromated gelatine. The image is so strongly visible that it could be used as a guide to the depth to which to carry the printing.

The tissue is very much faster than any of the ordinary kinds, in consequence, no doubt, of the great penetrative power of light in such a translucent layer as the coating on it. Over printing is almost sure to be the fault at first, and must be specially guarded against.

Transferring and development call for no remark, as they are carried out in the same

way exactly as with ordinary tissue. The print, when fully developed, must not be placed in alum, as this would affect the pigment injuriously; it is merely washed until all trace of the bichromate stain has vanished, and is then hung up to dry.

Before we actually used any of the paper we had a fear that in a white image of this kind bichromate stain might be troublesome; but as a matter of fact hardly any washing is needed. A couple of changes of plain water after the development, the print being left ten minutes in each, gave a result in which no trace of stain could be seen. The image was of a fine white, with just the slightest bluish shade already referred to.

Pictures made from positives on the new tissue appear like prints made in the color of the particular transfer paper employed. Thus on a warm black transfer paper they look like prints on warm black tissue, on red chalk they suggest a carbon print on red chalk, and so on. The color or tone of the picture is therefore dependent, not on that of the tissue as in ordinary carbon printing, but on that of the base.

Mr. Braham showed us some capital prints made by developing the pictures on dark stained wood: and there seem to be a good many possibilities in this direction for those who care to experiment.

A positive process like this—that is to say, one which gives us a positive image from a positive—seems, to the photographer whose experience has been limited to ordinary methods, a curious departure from the procedure to which he has been accustomed. Overprinting, instead of making his picture too dark, causes it to be too light; while underprinting results in the whole picture being heavy. The nearest approach to this order of things in modern photography is in connection with the autochrome plate; where also, in consequence of the reversal which is necessary, a full exposure results in a light, feeble image, and a short exposure in a dark, blocked-up one. In the same way, this white tissue, if it is exposed unduly to light while it is in the sensitive condition, becomes light-fogged, so that it does not go darker in those places, but lighter. Chemical fog, resulting in insolubility of the tissue, has a similar lightening and not darkening effect.

The new tissue may be used for photographic purposes instead of one of the ordi-

nary kinds; and it is possible that some workers may prefer it for this process. Although special photogravure tissues are made, different opinions are held as to their suitability, some swearing by them, while others find that in their hands the best results are to be obtained by using one or other of the tissues that are made for the ordinary carbon process. This seems to show that the choice of a tissue for photogravure is more a matter of personal preference than anything else; and a tissue which gives a visible image, as this does, which is a very fair guide as to the depth to which it is to be printed, may appeal to the users of a process in which the actual color of the pigment is of no importance.

We have not yet made any attempt to use the new tissue on the lines of our original idea, that is to say for picking out the high lights in a picture on a dark-toned base; but we hope to do so, and to refer to the subject again in a later issue. In the meanwhile we draw the attention of those of our readers who take an interest in novelties of the kind to the introduction. It looks as if it should lend itself to quite a variety of pictorial purposes; and we shall be glad to hear of the results of any experiments made with it, on the lines we have suggested or on any others. Those who are interested can obtain full particulars from the Autotype Company, 74 New Oxford Street, London, W. C.—*Photography.*

NOTE: Some years ago I had some white carbon tissue made. I believe I have some of it still, but lack of time prevented me carrying out the experiments I intended. I would suggest that the necessary positive could well be a deeply printed bromide on "Platinomatte."—[H. D'A. P.]

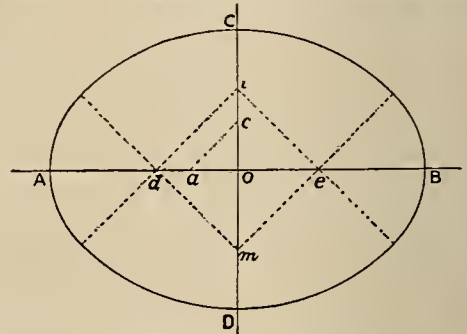
Masks Made To Measure

There is nothing quite so easy as making masks accurately to measure out of black paper; and yet some people think that none but a professional should attempt it. They make do with the ready-made ones, of which a very limited assortment may be collected from the packets of sensitized postcards. Circles, and more especially ovals, may be obtained from such sources, as they can hardly be contrived by an amateur without special apparatus; but a rectangular mask may be made to the exact size required al-

most more quickly than old ones can be tried to see if they will fit.

The first thing to be done is to measure on the negative the exact length and breadth of the required opening. The black paper is folded into four thicknesses, taking special care that the second fold falls exactly at right angles with the first; and then, considering the folded edges as center lines, half of the greater dimension is measured from the fold outwards on the length of the folded paper, and half the lesser dimension on the width of it, also from the fold outwards. At the point where these measurements cross, all four folds are pricked through with a needle, the paper is opened up, and, using an old negative as a straight-edge, is cut from prick to prick with a sharp penknife. Result: A perfectly rectangular mask, of the exact size required.

A modification of this device is found excellent for enlargements. After pasting the



untrimmed enlargement on any suitable card, which need not be an expensive mount, the exact size it should be after trimming is measured, a piece of art paper is folded into four, and the center cut out as just described for masks. In this case it will be better, instead of pricking through the corner, to cut through all four at once with a very small gouge, obtaining a small quarter circle in each corner. The art paper mask is then pasted down on top of the mounted enlargement, and it is ready for framing.

Although it is difficult to make a small oval to mask a postcard with accuracy, large ones, for masking head-and-shoulders enlargements, can easily be made by the following method, which is taken from D. K. Clark's Pocket Book.

The lines AB and CD are drawn equal to the two dimensions of the ellipse. From O, oa and oc are made equal to the difference

A PHOTOGRAPHIC DIGEST

between OB and OD . Then drawing ac and making ad equal to half ac , and oe , oi and om equal to od , the lines id , ie and md me are drawn. From the centres m and i arcs are described through C and D ; and from d and e arcs through A and B . The four arcs form an approximation to an ellipse.

All the drawing must be done on the back of the mask. The center may be easily cut out by following the line carefully with a sharp penknife. The center should be preserved for marking other masks of the same size by passing a sharp pencil round it. The enlargement can be mounted without trimming, and this mask pasted down on it. This will be found a thoroughly practical way of mounting an enlargement with a minimum of trouble and expense.—“Retratista” in *Photography*.

Photography In France

It was with much pleasure that we received, this month, the first Bulletin of the French Photographic Society issued since the war began. On the commencement of hostilities, our foreign exchanges, with the exception of the English publications, almost stopped; but, one by one, they are coming again somewhat reduced in bulk, especially in their advertising sections, showing how nations distraught with sorrow and uncertainty still have come back to old ways; and, like the Japanese soldiers who started their beloved flower beds round the blood-stained trenches whence they shelled the Russian forts, so the photographers of both camps are using their lens and their laboratories in the old way.

The first reissue of the French Bulletin (whose staff is largely in military service) is chiefly concerned with the decision of the French government to form a department of photographic records of the war (“Service de la documentation de la guerre”), under the control of the Under-Secretary of the Department of Fine Arts, M. P. Marciel. The duties of the department are to collect, for the use of museums and schools, views of the ravages caused by the enemy. The Under-Secretary of the Department of Fine Arts is intrusted with historical and classic buildings. The Minister of Public Works will seek for photographs of works of art that ought to be reconstructed. The Com-

missioner of Foreign Affairs (Commission des Affaires Exterieures) for documentary evidence to oppose false statements of the enemy (a opposer aux mensonges allemands). The Commission of Damages, precise (photographic) evidence of devastations committed. Archives of the war and life in the army. “In fact, the general aim of this collection of photographs is to present a complete photographic record of the country during the war.” Certainly they do many things in France better than elsewhere. When will the United States have a department of photography, or even a National Photographic Society?—H. D’A. P.

Marks Made By Retouching Medium

Most photographers who use retouching medium must have had trouble with it at one time or another by the medium leaving a mark or stain, which shows in the print, no matter how thinly it is applied. With the older type of negative, obtained by means of pyro-ammonia, this defect did not appear; but it makes its appearance spasmodically with others. It seems to be due to the condition in which the developer leaves the film, although the precise connection between the two is not clear. There is one method of preventing it, however, which is quite infallible; and that is to use an acid hypo bath for fixing, instead of a plain solution of hypo. If this is done, taking care that the acid bath is actually in a proper acid condition, there will be no sign on the print where the retouching medium begins or leaves off. If an acid fixing bath has not been used, then the negative can be treated with acid beforehand. An immersion of five minutes’ duration, or thereabouts, in weak hydrochloric acid (one part of acid to twenty parts of water), followed by a slight rinse before drying, will answer the same purpose as the acid fixing bath, and can be used at any subsequent time, should be it found necessary.—*Photography*.

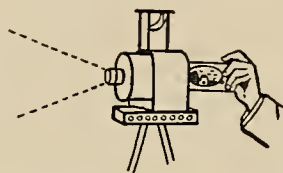
Piffle

“The trouble with you photographers,” said an artist friend of mine, fixing me with an accusing eye—in fact, with two of them—“is that you do not observe. What you want to do, or rather, what you do not want to do, but ought, is to study the work of artists” (slapping his chest), “and thus learn what you should aim at in photography.” Being at the time in a chastened mood, I refrained

from smiting him hip and thigh, and meekly replied: "Great master, your words are just. We camera men are a poor, unobservant lot. We have no eye; still less have we a brain or a soul. Duds we are, and duds we shall remain, until we humble ourselves and sit: the feet of artists such as yourself. I thank you for your reproof. Farewell."

Let me illustrate the justice of the contention that an artist is keenly observant, and show how easily and instinctively he idealizes even the commonest object, and infuses it with his soul and individuality. To that end, I have made a

faithful copy of part of the detail of an artist's drawing. If you glance at it, you will realize that a



photograph of a "magic" or optical lantern would not be anything like the drawing. It would merely look like a lantern.

Now, see how the artist deals with it. To begin with, he evolves an entirely original type of lantern. No instrument maker has ever turned out anything like it; probably never will. Its gracious curves are a revelation. The lens, however, is severely realistic. The type is familiar to us all. It is obviously a panthorectstiglinear. You could recognize it a mile off. As is well known, this lens has the peculiar property of imparting to the cone of light rays it emits a boundary of broken line. We may also note the phenomenon of a two-legged tripod, showing what a gifted artist can do when he fairly spreads himself out. The literal photographer would have included all the legs, in his commonplace way.

Again, the uninspired lantern maker perforates his instrument with ventilating holes. The artist soars above such utilitarian tricks, and ventilates the tripod head instead. That gives another strong note of individuality and originality.

The lantern maker, in his unimaginative way, arranges that the light shall pass through condenser, slide, and lens successively, and the operator slavishly abets him by placing the slide between condenser and lens. The artist arranges that the slide shall be shoved into the side of the lantern from the back. Not only does it do no harm there,

but it does not obscure the impressive light rays as they pour from the panthorectstiglinear, and flood the subject with a radiant brilliance. And look at the slide itself. We make our lantern slides square, although even photographers know that a square is not an "artistic shape." Its proportions are all wrong. They are uncompromisingly symmetrical. Wherefore the artist makes his slide a rectangular oblong of graceful and pleasing proportions enclosing a charming oval. It is on the picture contained in this oval that the artist has expended his most loving care. As far as it can be recognized as portraying anything, it comprises a brilliant arrangement of trees, subtly composed, with a charming placement of soaring birds each as wide as a tree from tip to tip of the wings. The wretched operator stuffs the slides in upside down, but as this would detract from the beauty of the subject, the artist has shown it right (wrong) side up.

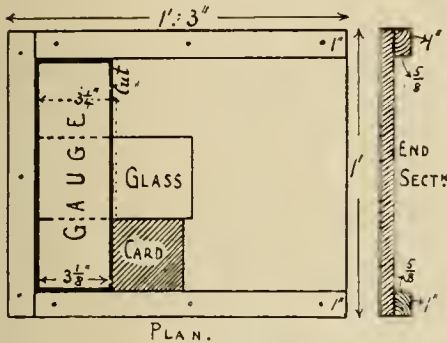
With the exception of the hand, I have omitted the lanternist. There is some more of him in the drawing, and what is shown of him in the drawing is in evening dress. Here again we abase ourselves before the artist's power of accurate observation. As we all know, every lantern operator operates in evening dress. Anything else is considered bad form. Also the artist has made the lanternist a perfect Apollo for beauty, and here again we recognize ability to dive beneath the mere surface of things. The ordinary person who has studied lantern operators comes to the emphatic conclusion that they easily outrival the portraits in the Newgate Calendar, but the penetrating eye of the artist pierces through the superficial appearance, and detects classical beauty where mere mortals see but the other thing. It is surprising how successful lanternists are in concealing completely the beauty which the artist proves them to possess.

My object lesson is at an end. I have proved my case up to the hilt. From a fragment of artist's work I have shown how lamentably we photographers fall short of the highest. We are too literal, too unimaginative. Our work entirely lacks originality of treatment, and we accept tamely the humdrum facts of actuality. To speak figuratively, all our tripods have three legs; we have not sufficient "soul" to suppress even one.—The Walrus in *Photography*.

A PHOTOGRAPHIC DIGEST

Cutting Glass

It is very useful to be able to cut glass accurately to size for lantern slide covers and passe-partouts, while users of vest-pocket cameras, who frequently cannot obtain a particular brand of plate in the small sizes, will find it very convenient to buy sensitive plates of the more common sizes, and cut them for use as required.



The arrangement shown in the sketch will be found to insure accurate cutting, and to possess the additional advantage that it may be used for cutting unexposed plates in the dark.

A flat board about 12x15 inches is fitted with fillets five-eighths by one inch, to form a raised edge along three sides, and a piece of three-quarter inch wood about three and one-eighth inches wide and ten inches long fitted so as to slide snugly between them. This piece acts as combined gauge and straight-edge.

It is essential that the gauge should adjust itself automatically, and thus its width should be the same as that required to be cut, allowance being made for the distance separating the edge of the cutting wheel from the surface which slides along the gauge. This distance is usually one-eighth inch, but as it varies slightly in various makes of cutters, it is a good plan to measure it accurately by laying the gauge along a fine pencil line drawn on a white card, and making a line parallel to this with the wheel of the cutter. The distance between these parallel lines is to be allowed for in making the gauge. It only remains to cover the bottom of the board with a piece of baize to prevent slipping.

To use the board, place the glass tightly

against the end fillet (gelatine downward if cutting old negatives), place the gauge in position over it, against the same fillet. As neither gauge nor glass can possibly slip, an accurate cut is the result.

The sketch shows a gauge in position for cutting lantern slide covers, but extra gauges may be made for cutting other special sizes, and thus plates for use in small pocket cameras may be cut in the dark. To avoid damaging the sensitive surface, it is advisable to lay a sheet of smooth white paper on the board.

The ideal glass-cutting tool is, of course, the diamond, but the cheap steel wheel cutters are very efficient, and, if properly used, will do all that the more expensive diamond will do.

The cutter should be held vertically and between the first and second fingers; if held otherwise, there is considerable loss of power.

Cut towards the body, and at the end of the cut do not allow the wheel to run off the glass and strike the board. This blunts the wheel and leaves behind a small chip of glass every time. Allow the wheel to run on over a piece of card of the same thickness as the glass. This is very important in cutting sensitive plates.

If the wheel has any "play" sidewise on its axle, always begin to cut by placing the wheel as far away as possible from the edge of the gauge. It will then run uniformly in that position, especially if lubricated.

Avoid using the notches to be found on the side of the cutter. If a corner of glass needs removal, use pliers.

The wheels are so cheap that they are scarcely worth the trouble of sharpening. If necessary, they may be sharpened by rolling them sidewise on an oilstone, or even on a well-oiled slate. Beware of over-sharpening; this "flakes" the glass along the "cut."

After the "cut" has been made, grip with finger and thumb on each side of it, and as near the edge as possible, gelatine coating (if any) downwards. A sharp bending movement downwards separates the glass. A similar movement upwards breaks the film.—F. S. B. in *Photography*.

NOTE: I was recently shown a very valuable tip in the use of the wheel cutters, and that is to wet the wheel with kerosene, turpentine or alcohol before cutting. If the cut is to be a long one, the whole line of section

should be moistened. With this precaution the wheel never fails to grip and cuts from end to end.—(H. D'A. P.)

Gum-Bichromate Prints On Glass

In the *Scientific American* recently, Claude C. Kiplinger, of the Iowa State College, described a modification of the gum-bichromate process on ground glass, which was then varnished to give it the required transparency.

The glass was coated with a mixture of two-thirds of an ounce of a saturated solution of potassium bichromate, one ounce of saturated solution of gum arabic, and forty grains of lampblack or an equivalent color. The gum solution was prepared by suspending two ounces of clear gum contained in a muslin bag in six ounces of distilled water, allowing this to stand for at least twenty-four hours, and then mixing it with the bichromate solution. The lampblack was put on a clean piece of ground glass, a little of the gum solution added, and the mixture ground with a glass strip to a uniform consistency. After grinding carefully and thoroughly, this was mixed with the remainder of the solution.

The ground-glass surface of the plates was coated with a camel-hair brush, using just enough of the solution in each instance to give a uniform dark gray tint when viewed by transmitted light. A second soft brush might be used to even the coating as much as possible, so as to obliterate brush marks which would show in the finished print. The coated plate must not be opaque in any part. The plate should be dried in the dark, which takes only a few minutes to accomplish.

An average negative might require an exposure of from three to five minutes in bright sunlight. To develop the plate it was soaked in cold water for several minutes, the temperature of the water being then gradually raised until development begins. The exposure should be so timed that development proceeds automatically, as any mechanical assistance, other than moving the plate gently through the water, would destroy the finer details. Because of the rigid glass backing, the image is easily destroyed by even a slight touch of a soft brush. Hence, the plate should be soaked face downwards, for several hours if need be, until finished.

When the development was completed, it

was dried and varnished with a quickly drying pale oil varnish. A pool of varnish was poured onto the center of the plate, allowed to flow over the entire surface, drained, and the plate dried face upwards in a place protected from dust.

Among the causes of failure are: brush marks due to uneven coating; loss of detail, or damaged image, due to rough handling in development; too thick a coating of gum-pigment, resulting in the film peeling off in development.—*Photography*.

The Development of Iodide Images

A contributor, in advocating the copying of iodide-bleached instead of mercury-bleached images for the purpose of combating effects of under-exposure, stated that he knew of no developer that would darken the iodide image. It is, however, possible to redevelop such iodide images, though, for some reason or other, the process presents peculiar difficulties. Apparently the only developer that works well is hydroquinone and even this will have practically no effect unless exposure to extraordinarily powerful light accompanies the development process. Diffused daylight is of no use. If daylight alone is available, then we must expose to direct, strong summer sunlight. Winter sunlight is of little use unless it is very exceptionally powerful for the time of year. For convenience we use magnesium ribbon, burning about six inches of ribbon at a distance of one to two inches from the plate. This seems the best light of all, for though we have also tried a powerful enclosed arc at very close quarters, the results were not very good. A peculiarity of the result is that it usually shows strong intensification. The cause of this was investigated by Piper and Carnegie some years ago, and proved to be a result of partial redevelopment. Only about a third of the silver iodide contained in the image is blackened by the developer, and as this blackened portion forms the outside only of each silver grain, the grains are very much more bulky than they would be if reduced throughout. The larger bulk gives much greater density and the process is by no means to be despised as one for intensification, though it is somewhat inconvenient, and the result not well under control. The working must be carefully standardized if uniform results are desired.—*British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Making Paper Translucent

A subscriber wrote in recently to ask how prints, or rather, the paper support on which the emulsion was coated, could be rendered translucent for coloring from the back. We referred him to an article on crystalium painting in an issue a few months back, sending him a copy thereof. A reply came, saying that the formula required was one composed of several ingredients, one that he had used several years ago with satisfaction, but the formula had been misplaced. The following is perhaps the one wanted:

Powdered resin 2 ounces

Gum elemi 2 ounces

Paraffin wax 1 ounce

Rectified spirits of turpentine... 6 ounces

This must be boiled with a great deal of care to avoid its catching fire. This is best done by careful stirring all the time, and one should have at hand a close-fitting lid or cover for the vessel in case the mixture does catch fire. A large enameled saucepan is best for the purpose, one large enough to permit the mixture to froth up as it comes to a boil without running over before it can be lifted away from the fire. After this first boiling, remove from fire, allow to cool a little, add the six additional ounces of turpentine and then put in wide-mouthed bottles and cork well. To use, lay the print face down on a clean blotter, and, with a flat brush well charged with the mixture, go rapidly over the entire back of the print. If, on drying, white spots appear, repeat the process, giving two additional coatings if necessary.

Removing Developer Stains

An Illinois subscriber has a number of negatives that he values quite highly that have taken on what he calls iridescent surface stains, evidently the well-known dichroic fog produced by some developers acting upon stale plates. A solution made by adding potassium cyanide, about ten grains per ounce, to distilled water will remove these

stains, as will also, in some cases, a weak form of Farmer's reducer. The first is the most effective and a caution should be added as to the poisonous nature of the cyanide. Immersion in the solution, accompanied by gentle rubbing, followed by washing to remove the cyanide, will give the desired result.

Testing Flash Powder

One of our subscribers is a commercial photographer in a large city, one who does a lot of flashlight work and consequently is not only interested in the comparative value of different brands, but finds himself the recipient of special attention from every salesman of that product that visits his city. These gentlemen take up considerable of his time and have heretofore caused him some uneasiness as to the degree of truth in their individual statements that their particular products gave more light per unit of cost than any of the others. The idea recently occurred to him to prepare matters for a simple test that could be made in much less time than could the salesman talk, and at the same time be much more convincing. He photographed one sheet of a monthly calendar on a 4x5 plate and from it made a good, strong transparency. Then he took thirty sheets of 4x5 tissue paper and, starting with the first, cut it so that all the numbers except the last, thirty-one, were covered; cutting the next sheet so that all except the last two numbers were covered, and so on until he had used the entire thirty sheets, the figure one on the positive being covered with thirty thicknesses of tissue, two being covered with twenty-nine, three with twenty-eight, and so on down to thirty-one, which was uncovered. A binding all around the edge gave a very finely graduated actinometer. Placing this in a printing frame with a sheet of standard developing paper behind it, he fired three grains of the powder being used three feet in front of it. Developing this print, he found that his powder showed the figures on

CAMERA CRAFT

a certain number of the squares. When some one wants him to try a new powder, he simply weighs out three grains and explodes it at the same distance from the frame, and the print tells the tale. If a greater number of figures show, the new powder is obviously more actinic; if a lesser number, the opposite is the case.

The Distance Important

The other day we were looking over a collection of prints brought for our inspection by an amateur who seems to appreciate our comments on his work. These happened to be all recent work, exposures made during the past autumn; and, knowing the general clearness of the atmosphere in his section, we were inspired to ask as to the means employed to get such good atmosphere into his distances. The reply was that he did not get it there; it was there when he made the exposure and he simply secured what the scene presented. He went further and explained that he had, some months before, discovered the importance of a soft, yet luminous distance with that veiling so characteristic of all except the most brilliantly clear atmospheric conditions. Perhaps the discovery of this for himself had given it an importance that it did not warrant, but he had, during the past few months, absolutely refused to be enticed into making an exposure when the required conditions did not maintain. He never takes a landscape without first looking carefully to the distance. If he finds it clear and distinct, the view is passed for another and more suitable one having a background or distance containing some degree of haze. This of course means the giving up, for the time being, of some desirable compositions, but it also means that when the atmospheric conditions are not favorable in one direction, they are frequently all that could be desired in another.

Trying The New Things

True, there is hardly any good reason why one should waste his time and energy in trying every new thing that is offered; doing as some do, carries the matter to an extent that prevents his making anything worth while. And yet, the worker who plods along in the same rut, using the same materials and processes year after year, misses many of the good things, many of the possibilities of improving his work. Practically every new

photographic product advertised in a reputable photographic magazine is worthy of trial by a major portion of that magazine's readers. Just imagine yourself a manufacturer of photographic paper, for example. You have an established demand for certain kinds and grades of paper. You would hardly go to the expense of introducing a new brand—and you can rest assured that it means some expense, if you were not fully convinced that the new product was possessed of enough merit to win more business for you. And if you had been in the business and given it your careful study for a number of years, you would find yourself fairly competent to judge of the need for the new product, to judge of its popularity once you could get the photographers to give it a trial. When such a manufacturer announces a new product he tries to tell you what it will do and why you should buy; but, in reality, he is telling you that from his years of experience in providing printing paper for photographers he is willing to back his belief in this new product being what you want by the no small expenditure required to get it before you and induce you to give it a trial. Of course, the new product may be unsuited to your way of working, to your idea as to results, to some other individual requirements, but in trying it the chances are all in favor of your finding something that will please you better than what you have been using.

Improved Scale Pans

In a dark room we visited the other day we found an improvement over the ordinary brass scale pans in the form of watch crystals that had been substituted therefor. These glasses were fairly thick and quite curved in form and by having three holes bored in the edges of each they were easily attached to the small chains of the hand scales that had previously held the brass pans. The end of a small, three cornered file, used as a drill, used with a little turpentine, makes the holes quite easily. Several extra watch crystals are kept handy for use on the brass pan of a couple of other scales on the work bench. These are easily cleaned and of course such chemicals as bichromate of potassium, caustic potash and the like, do not have any corroding action upon the glass as they do on the original metal pans.

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NEW MEMBERS

4161—Lee A. Cartmell, R. F. D. No. 1, Box 68, Crowley, Texas.
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4162—S. T. Dent, 2744 N. Ringgold St., Philadelphia, Pa.

Up to 5x7, developing papers, of park scenes, home portraits, city views, etc.; for anything of interest in black and white only, unmounted. Class 1.

4163—C. A. Heald, R. F. D. Box 26D, San Dimas, Cal.
Class 2.

4164—Guy Prater, R. F. D. No. 3, Iberia, Mo.
3¼x4¼, 3¼x5½, and 5x7, developing papers, of Missouri views, river views, genre; for animals, river and farm views, also genre. Class 1.

4165—Knöfel D. Vance, 137 Riverside Ave., Little Rock, Ark.
Class 2.

4166—Ernest Smith, Kayenta, Ariz.

3¼x4¼, developing post cards only, of natural bridges of Utah, cliff ruins of Mesa Verde, Navajo national monuments, ruins, rocks, and Indians; for nude, native life of various countries and Indians, also good scenery. Class 1.

4167—M. E. Verkin, 1922 M ½, Galveston, Texas.

5x7, 6½x8½, and 8x10, developing papers, of commercial views; for the same. Class 1.

4168—Edward H. Bohn, P. O. Box 221, Hampden Sidney, Va.

2¼x3¼, 2½x4¼, and 4x5, developing papers, of marine and subjects of historical note; for anything of general interest. Class 1.

4169—Albert Paul Smith, 569 West 173d St., New York City.

3¼x4¼, developing papers, of general work with Graflex; for general work. Class 1.

4170—H. C. Ford, Iowa State College, Ames, Iowa.
Class 3.

4171—Samuel J. Heaton, Ferris, Ill.

3¼x5½, various papers, of scenes of Fair, mountains, ocean, Keokuk Dam, etc.; for anything of interest, mountain scenery, etc. Post cards only. Class 1.

RENEWALS

2146X—U. W. Tryon, 327 Sargent St., Kendallville, Ind.

Post cards to 8x10. Good work sent out and demanded. Class 1.

2482—John W. Kimball, Guard Vt. S. P., Windsor, Vt.

Post cards and 5x7, developing papers, of a good assortment of New England scenery, such as rivers, lakes, mountains, country scenes, and landscapes; for anything of interest, but prefer good scenery of different parts of the country. Would like to get a good set of views of the Yosemite Valley. Post cards or prints on D. O. P., for good work only. Class 1.

2671—Arthur Soderstrum, 2944 East 28th St., Kansas City, Mo.
Class 2.

2773—John L. Moloney, Box 56, Missoula, Mont.
Class 2.

3189X—W. R. Davison, R. F. D. No. 3, Brighton, Iowa.

4¼x6½, developing paper, of landscapes, buildings, street scenes, and miscellaneous views; for any good views. Post cards only. Class 1.

3227—V. Rose Huff, Chagrin Falls, Ohio.

Prints, post cards, and enlargements, interesting subjects in good work and prompt exchange. Have a few in water color; would like to correspond and give detail of work. Class 1.

3230—Lewis D. Capen, Box 24, Millbrook, Mich.
Class 3.

3271—M. de Leon Imus, Lock Box 91, Chelan, Wash.
Class 2.

3765—Carl F. Matthews, P. O. Box 23, Colorado Springs, Colo.
Class 2.

CHANGES OF ADDRESS

2880—J. H. Helsley, 127 20th St., Warwood, W. Va.
(Was Martins Ferry, Ohio.)

4009—H. J. Gergen, 125 H St., San Bernardino, Cal.
(Was Escondido, Cal.)

4156—Thos. P. Mason, 3110 Dunham Ave., Kansas City, Mo.
(Was 415 Bellefontaine Ave.)

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

The Union Camera Club Exhibition

The Annual Exhibition of the Boston Young Men's Christian Union Camera Club was held at its rooms, 48 Boylston Street, December eighth to eleventh, inclusive. The pictures displayed were of exceptional interest, meriting and receiving the most favorable comment from those who saw them. The first prizes in the landscape, portrait, marine, genre and general classes were awarded to Fred W. Hill, Arthur Hammond, Henry C. Shaw, Howard I. Saunders and Arthur Hammond, respectively, while second prizes in the first two classes were awarded to Merton L. Vincent, and in the others, in their order, to Howard I. Saunders, Louis Astrella and Herbert B. Turner. The judging was done by the Misses Clarissa Hovey, Mary Patten and Jean Oliver; Messrs. Stanley, Astrella and Howard made up the committee having the exhibition in charge.

The Photographic Exposition

At the Second Annual Exposition of Photographic Arts and Industries, to be held in Cleveland the week of March sixth, in connection with the Fourth Annual Convention of the Photographic Dealers' Association of America, considerable attention will be paid to the exhibition of representative photographs in the Photographic Competition, to be held under the auspices of the Photographic Dealers' Association of America. This Exposition, it is estimated, will be attended by at least one hundred and fifty thousand persons, in addition to the delegates to the convention of the Photographic Dealers' Association of America and numerous manufacturers and industrial representatives, which gives an unusual and interesting aspect to this feature of the Exposition.

The prints for this contest will be suitably arranged and hung by an experienced committee and every effort will be made to present the pictures to the best advantage. Cash

prizes, accompanied by a diploma, will be awarded to meritorious exhibits in each class. Diplomas of merit will be given to all prints rated above seventy-five per cent. The awards will be made by a jury composed of three well-known amateur and professional photographers. The Professional Class will be open to professionals only. This class will be confined to portraiture and limited to five pictures from each entrant. The Amateur Class is open to amateurs only and will comprise prints of every description, limited to five from each entrant.

The following cash prizes will be made in the Professional Class: First prize, fifty dollars; second prize, twenty-five dollars; and five five-dollar cash prizes for the next five best prints. Each of these awards to be accompanied by a diploma. All other prints of merit will receive a diploma of honorable mention. The following cash awards will be made in the Amateur Class: First prize, fifty dollars; second prize, twenty-five dollars; and five five-dollar cash prizes for the next five best prints. Each of these awards to be accompanied by a diploma. All other prints of merit will receive a diploma of honorable mention. To avoid needless repetition and to keep the exhibition upon the high plane desired, only such prints will be shown as have passed a competent examining board composed of prominent artists and photographers.

The Exposition management believes that the opportunity afforded photographers to display their work under the reasonable rules formulated for this competition, to such a large number of interested people will induce a liberal representation in all its branches. Prospective exhibitors are urged to send for entry blanks without delay so that preparations can be made for the proper display of their pictures. Address all inquiries to the Print Committee, International Exposition of Photographic Arts and Industries, 241 Engineers Building, Cleveland, Ohio.

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As a book that makes a strong appeal to the typical boy anywhere between the ages of ten and twenty years, this is the best that has ever come to our notice, and we cannot see how it can be improved upon. While it seems to encompass the whole range of activities of the average boy, from woodworking to wireless telegraphy, it also covers the rules and best practice of sports and pastimes of every conceivable description. The author, Chelsea Curtis Fraser, has not only the widest possible knowledge of the various subjects, but has the happy faculty of imparting that knowledge in a manner that is both attractive and alluring to the boy reader. His method is not to simply advise the purchase of necessary apparatus and material and then describe its use in the ordinary manual style, but he gives instructions by the aid of which the reader can make for himself the things required. In the chapter devoted to amateur printing, complete instructions, fully illustrated, are given as to the construction of a serviceable press. In the chapter on photography, wireless telegraphy and others, the same course is pursued.

This book is one that we can unhesitatingly recommend most strongly, and as a gift to a boy, we could hardly imagine anything more certain of a hearty welcome. Furthermore, the beneficial effects resulting from such a gift is impossible of over-estimation, as even the least mechanically inclined boy could not fail to be tempted into taking up at least some of the lines made so easy and inviting. Published by The Page Company, 53 Beacon Street, Boston, Massachusetts; price two dollars net; carriage paid, twenty cents extra.

"Three Hundred Things a Bright Girl Can Do"

This book, by Lilla Elizabeth Kelley, is so complete and comprehensive in its scope that it is almost impossible to give, in a brief

notice, an adequate idea of the valuable information that it contains. While games and amusements, particularly those of an athletic nature, are given attention, in practical usefulness the book is exhaustive in its scope. We can hardly do better than quote from the table of contents a few of the titles of the twenty-four chapters going to make up the book. Among them are: Beads and Their Uses, Worsteds, Thread Work, Bent Iron Work, Basketry, Rug Making, Art Work, Clay Modeling, Athletic Sports, Gardening, Housewifery, and Entertainments and Amusements. Unquestionably one of the best books that could be placed in the hands of a girl, and we can hardly imagine its failing to be other than appreciated to the fullest extent. The six hundred or more pages are fully illustrated, and the binding is in keeping with the beauty and utility of the work. Published by The Page Company, 53 Beacon Street, Boston, Massachusetts; price one dollar and seventy-five cents, net; carriage paid, twenty cents extra.

"Making a Photographic Objective"

The above is the title of a reprint of a paper by H. C. Lord that appeared in Vol. XVI, No. 1, of *The Ohio Journal of Science*. This paper contains several halftone illustrations made from 5x7 enlargements from negatives $1\frac{3}{4} \times 2\frac{1}{8}$ inches, taken with a lens designed and built at the Emerson McMillin Observatory of the Ohio State University. This lens, working at an aperture of f-6, demonstrates thoroughly the advantage of adding practical shop experience to the theoretical work of the Course in Applied Optics at the University. In this paper there is an explanation as to how the ordinary tools of a machine shop, supplemented by such special appliances as were made, could be used in the production of a thoroughly practical and satisfactory photographic objective. The paper is particularly interesting, and Mr. Lord advises that he will be glad to send

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them gratis as long as the supply lasts. All that is necessary is to address a request to H. C. Lord, Director, Emerson McMillin Observatory, Ohio State University, Columbus, Ohio; and, while Mr. Lord does not ask that it be done, our readers can hardly do less than enclose a stamp with their request in order that his kindness may not be made too burdensome.

"The Spell of Belgium"

This, the latest of the popular "Spell Series," is another example of the crisp, clear narrative that the same author, Isabel Anderson gave us in "The Spell of Japan." Always interesting, this author gives us an intimate and authentic account of the people and the history of this most interesting country, a country that has given us so much in music, art, architecture and, but so recently, heroism and strength. Belgium, the "cock pit of Europe," has seen many wars, has recovered therefrom and has much to offer that interests the traveler, or, what the reader for the moment becomes, a traveler using the eyes of another and perhaps more keenly observant person; in this case, the eyes of one having more than the average opportunities for seeing and more than the average amount of that requisite of a good narrator, an appreciation of relative importance, of perspective, of proportion. The volume is beautifully illustrated with forty-eight duogravures, four plates in full color and an excellent map. Published by The Page Company, 53 Beacon Street, Boston. Price, two dollars and fifty cents net; carriage paid, twenty cents extra.

"The Crimson Gondola"

This is an historical romance, its setting Venice and Constantinople at the time just preceding the fourth Crusade and the Latin conquest of the latter city. A powerful romance having all the charm displayed by the same writer, Nathan Gallizier, in "The Hills of Venice," "The Sorceress of Rome," and others, characterizes this, the fortunes and adventures of Audron de Vere, in his mission of rescuing the Lady Eleanor of Montferrat from the witches' cauldron of the Greek capital. The accuracy of the historical setting and color is due to the author's deep study of ancient and mediæval history, while the story itself is one that has a fascination that would be hard to resist in a less well-told form. The same artist, Edmund H. Garrith,

who illustrated "The Hills of Venice," has again added to the charm of one of Gallizier's romances and the reader profits thereby. Published by The Page Company, Boston. One dollar and thirty-five cents net; carriage paid, fifteen cents extra.

"How To Choose and Use a Lens"

This is the title of a thoroughly practical and exceptionally instructive little book that has just been published as No. 3 of the Practical Photography Series, by the American Photographic Publishing Company, Boston, Massachusetts. In addition to the valuable information contained in the text proper, there is a table of hyperfocal distances, a reducing and enlarging table, rules for copying and enlarging, for graduating focusing scales, and a comparison of the various systems of diaphragm numbers, making the manual a most complete and thorough one. The low price, twenty-five and fifty cents, respectively, for the paper and the cloth binding, places it within the reach of all. Obtainable from dealers or from the publishers direct.

"Kultur Cartoons"

A striking collection of twenty strong and vivid pen pictures, a protest, in cartoons, against militaristic monarchy and its dangers to civilization, a repudiation of the belligerent theory of life. The work of this artist is particularly strong and the symbolism employed shows an appreciation of a much deeper vein than that from which the less gifted cartoonist mines his inspirations. Vanity and pretension, not loyalty and patriotism, are made the target for the thrusts of his pen in this collection of clever cartoons. Handsomely bound in album style, boxed. Published by The Page Company, 53 Beacon Street, Boston. Price, one dollar net; carriage paid, fifteen cents extra.

Illinois College of Photography

Vahram Isbetcherian, student of the B. C. P. E., and formerly of Constantinople, Turkey, is the proud owner of a silk, hand-woven Turkish rug, a reproduction of the likeness of President Woodrow Wilson. The rug is woven from specially made silk, and four and one-half months were required for its completion. Mr. Isbetcherian values it at \$150.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

James N. Doolittle is now with George H. Kahn, of this city.

Clarence De Freis, a prominent photographer of Portland, spent the first two weeks of January in San Francisco.

Miss Bessie Hesby, of Los Angeles, is now at the Bushnell Studio in San Francisco.

Sam Hill, for years head printer with Hartsook in Los Angeles, is now in San Francisco at the Bushnell Studio in the same capacity.

All the studios visited did a big holiday business. How was it with you?

L. C. Buttrick's smiling face is again on the Coast. He spent his vacation in Rochester.

Harry Gibbs, of the Gibbs Studio, San Francisco, is turning out some fine art studies.

The "Imp" At The Convention

At the coming Second Annual International Exposition of Photographic Arts and Industries in Cleveland, the Imperial Brass Manufacturing Company will have their Imp Flashlight Gun, together with a large and interesting collection of pictures taken therewith, on exhibition in Section 130. We have seen copies of a number of the pictures that will make up this display, and we can assure visitors that they will find them most interesting, particularly in connection with the very simple and efficient little flashlight apparatus with which they were produced. The Imp Flashlight Gun is manufactured by the Imperial Brass Manufacturing Company, of 1215 West Harrison Street, Chicago, and our readers will do well to send for descriptive matter concerning it.

Two Magazines Merged

Arrangements have been made by the publishers of *Popular Photography* and *The Photographic Times* to merge these two magazines, beginning with the issue of January, 1916, and the combined magazines will appear under the title of *Popular Photogra-*

phy for this issue. *The Photographic Times* is the second oldest photographic magazine published in the United States, and the combination of this famous and dignified publication with the strong circulation of *Popular Photography* is expected to produce a magazine which will be a very powerful factor in the photographic field. The magazine formed by the combination will be published in Boston by the *American Photographic Publishing Company*, at the subscription price of one dollar a year.

Steadman's Unit Actinometer

When Mr. Steadman announced his Unit Actinometer about a year ago, he greatly underestimated the difficulties to be encountered in its production, a common error on the part of those who are inexperienced in the manufacturing line. Those who have waited so long and so patiently for an opportunity to use this excellent device will be pleased to learn that it will very shortly be ready for the market.

Mr. Steadman has recently brought Unit Photography to the notice of a number of schools, universities, physics and camera clubs in and about New York, including Columbia University, the Ethical Culture School, Brooklyn Academy, and others. Great interest has been manifested therein and Mr. Steadman has reason to believe that his method will be adopted, not only for school work, but by those responsible for our text-books on physics, as its merits become more widely known and its popularity proven. See the new advertisement and write Mr. Steadman for particulars.

Local View Post Cards

A recent caller, a professional in a small town in Lake County, showed us some of his local view cards he has received from Curt Teich & Company, of 1745-1755 Irving Park Boulevard, Chicago. The cards are excellent in quality and our friend reports a good sale to not only his local dealers, but to those in

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the surrounding smaller towns. He expects to add a number of new subjects to his assortment and is also thinking of ordering some of his most popular views in the American Art style made by the same firm. We believe that there are not a few of our readers who might follow his example if they would but look over their field and get prices from this firm that makes a specialty of view cards from photographers' own prints. Their cards are manufactured in a number of styles at varying prices, so that one having the proper views or the facilities for making them should have no trouble in selecting a style that will suit the trade he is able to supply. It will do no harm to get in touch with the firm by writing for samples and prices.

Aiding Export

J. G. McIan, a commercial photographer, addressing the Export Club of the Cincinnati Chamber of Commerce at a recent meeting, discussed exporting by photography. He said in part: "Not one of your products but has been, is or will be exploited through photography either directly or indirectly. Your machinery, tools, pianos, furniture, pottery and soaps, your plants, your inks, even your whiskey, wines, liquors and beers. Your railroads exploit themselves through photographs of their rolling stock terminals, scenic views of their hills and rivers. In fact, the world's best silent salesman brings to your trade a more intimate and lasting knowledge of your product than any word of tongue or pen, and stays with it."

Illinois College of Photography

L. B. Tyler and Jos. R. Bull, both I. C. P. students of the class of 1915, were visitors the past month.

A. M. Rieme and Miss Ella Klein have returned to complete their courses in photography.

Prof. D. J. Cook, Superintendent of the Bissell Colleges, who is Worshipful Master of the Effingham Lodge, F. & A. M., was in attendance at the meeting of the Grand Lodge in Chicago, as a representative of the local chapter.

E. E. Kelsey, while on a visit to his son Theodore, a student of the I. C. P., gave two talks to the students, which were enjoyed very much. Mr. Kelsey related his experi-

ences while traveling around the Hawaiian Islands on a bicycle. For the past few months he has been employed in raising funds to help the war-stricken countries of Europe. He and his son will remain in this country about a year and a half, and will then return to Hawaii.

At a meeting of the College Camera Club, held recently, the following students were elected as officers for the next term: President, T. Henderson; Vice-President, J. H. Quinn; Secretary, C. W. Anderson; Treasurer, R. K. Wilmarth; Corresponding Secretary, L. T. Walter.

Prof. C. W. Dishinger of the Printing and Finishing Department spent a day in St. Louis recently, and while there called at the Conkling Studio, where H. G. Salzgeber of '15, has charge of the developing and printing.

In the last monthly competition of the College Camera Club, E. V. Reyes, of Huacho, Peru, was the winner of the first prize.

L. S. Wise, of the College, is specializing in motion picture photography. He recently took some very interesting views at Mt. Vernon, Illinois, showing the car shops and other industries of that place. The work will be finished at the College and then sent to Mt. Vernon to be shown.

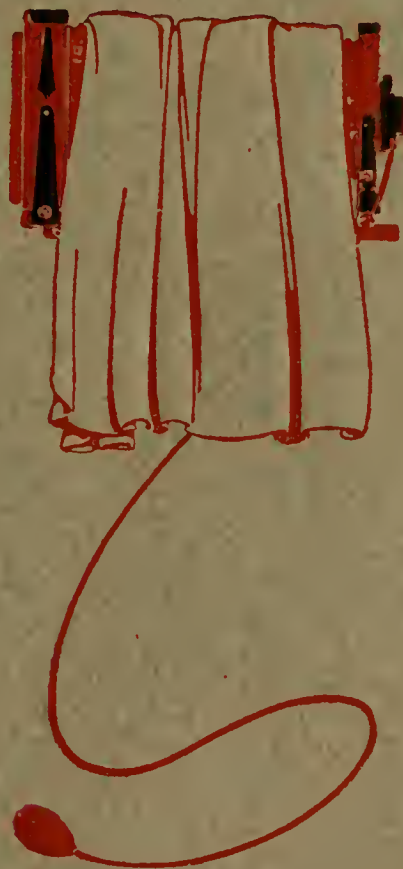
Among the new students who have recently enrolled is Miss Katherine Kessler, of Milan, Switzerland. Miss Kessler was accompanied by her mother, who will remain in Effingham during the former's course of instruction.

President and Mrs. L. H. Bissell have just returned from their annual trip to California, where they have been on a visit to their daughter, Mrs. Ruby Magee and family, of San Francisco. While in the "Land of Sunshine" they attended both Expositions, and report a delightful trip.

Santa Claus and Dan Cupid seem to have combined forces. On December twenty-fourth, at Evansville, Indiana, Miss E. Gertrude Davis, of Amherst, Massachusetts, and Benjamin Essex, of Paulding, Ohio, were united in marriage. Both are former students of the College, and the happy event was the culmination of a romance which began previous to their graduating last September.

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A Photographic Monthly

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Canada	Kodak Australasia, Ltd., Sydney
England	United Photographic Stores, Ltd., Montreal
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New Zealand	Calpini y Cia., Mexico City
Philippine Islands	H. J. Jones & Co., Ltd., Wagananui
Japan	Squires, Bingham & Co., Manila
	K. Kimbei, Yokohama

1886

1916

OUR 30TH ANNIVERSARY

To-day, thirty years of effort to supply your photographic wants, and please you in so doing, lie behind us.

To pause and thank you for the generous support extended us is a pleasure that in itself is no small reward.

We hope that each recurring milestone may give us, by reason of our continued effort to serve, the opportunity of extending to you, our same hearty thanks.

HIRSCH & KAISER

218 POST STREET

San Francisco, Cal.

March first, 1916



THE BRIDE
By W. E. LENNEY



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

MARCH, 1916

No. 3

Home Photography

By W. E. Lenney



With Illustrations by the Author



CHILDHOOD'S HAPPY DAYS

the new and different conditions that exist in the homes, is all that deters some of them from making a venture into this promising field.

Portrait photography as a business has, during the past few years, experienced some radical changes; conditions have been far from settled; rather, they have been more unsettled than they usually are. The conservative studio man has been having his troubles, not only with the post card man cutting quite deeply into his medium-class trade, but with the home portraiture worker going after his patrons who buy the better grades of work. To such an extent has this progressed that some professional portrait men are seriously considering whether it would not be advisable to get away from their studio and go after some of this lucrative home portrait work themselves. A fear that they may make a failure of the work, under

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While it cannot be said to be easy to succeed in making the class of pictures for which a discriminating clientele will pay good prices, I know that the advanced worker, if at all ambitious, can make as perfect lightings by ordinary windows, assisted at times by the flash, as he can make under the skylight. Concentration of light and subordination of detail are easily accomplished by simply stretching a thickness or two of black cheese cloth across the lower part of the window being used, fastening it in place with push pins. This done, the light will fall from above at the proper angle; and, working parallel to the window, with sitter placed as close thereto as possible, the best of results can be obtained. A background of black or gray cloth, as desired, can be fastened against the wall with push pins, while a reflector of white or gray cloth can be



EXAMPLES OF EVERY-DAY HOME PORTRAITURE

placed upon any sort of a support that may be handy. I frequently use the back of my closed flash lamp, running it up high for the purpose. By working in this way, anybody who understands lighting can make perfect negatives with ease.

However, the plan will hardly answer for children, owing to the rather long exposures required, so here is where one must have recourse to the flash, without which it would not be possible to achieve success except under the most favorable conditions. By proper manipulation of the light, negatives of perfect roundness and snappy sparkling high lights can be secured with the flash just as readily as by daylight. The formula is, to use the light at the proper height and angle, using exact amount of powder, and employing a vigorous developer. The results will be perfectly lighted negatives. While the novice will require some



HOME PORTRAITURE—THE TWINS

experience before he can adjust these details, the experienced photographer should have little or no trouble.

One has only to consider the front of the flash lamp as the uncurtained portion of a skylight, at least in the matter of its height and angle. Of course, while daylight would pass through an opening of like size in a skylight in practically parallel lines, the light from the front of the flash lamp spreads out at quite a wide angle, simply because its source, the flash itself, is close to the opening or front of the machine, while the illumination from the sky is some distance away from the opening in the skylight. The next point to remember

is that the intensity of the light is practically in the same ratio as the square of its distance. In other words, if four grains of powder are required with the flash machine five feet from the subject, at eight feet there will be required a little over ten grains. This, of course, would apply strictly only with a naked flash, but even with the flash machine the worker will be surprised at the rapidity with which the amount of powder necessary increases as the lamp is removed further from the subject.

It might be explained that in securing the usual portrait lighting, the light falling at an angle of forty-five degrees, it is only necessary to so adjust the lamp that its distance from the sitter is approximately equal to its height above the sitter's head. As to the amount of powder required, the matter is quite simple. Depending upon the brand of powder used and the lens stop employed, somewhere between four and ten grains will be found right for the ordinary distance of five feet. Let us say it has been found that seven grains of the particular powder used give good negatives with stop f-6.3 and the lamp five feet from the subject. One will know just how much to increase the powder for a smaller stop by calculating each grain of powder as one second exposure and increasing the powder just as he would increase the exposure. However, the actual exposure, the duration of the flash, is somewhere between one-twentieth and one-fortieth of a second, depending upon the speed of the powder used. In altering the distance between lamp and sitter, the alteration in the amount of powder used should be in accordance with the difference between the square of the known distance and the new one employed, as explained above. The only other point to remember is that the fair-skinned, softly rounded faces of children require less powder than do the darker skinned and more angular faces of adults.

The beginner may have, as I did at the beginning, a few failures due to the flash and shutter not working in unison. If the shutter does not open full with the flash and close promptly, closed eyes may result. Whatever shutter is used, it must close on the instant, as practically all home portrait work is done in the daytime with the room filled with sufficient white light to permit impression if the shutter closes too slowly.

Let me impress on the reader that successful sittings must be made on the first visit. If it should happen that the proofs from the first sitting are unsatisfactory, no matter from what cause, the photographer will not again be accorded the same measure of confidence and esteem by that particular customer. The worker lacking experience in this particular line will do well to make a number of experimental exposures in his own home in order to acquire the necessary amount of skill and confidence.

The home portrait worker should be versatile, he should be able to put aside his preconceived ideas of lighting and posing, taking conditions as he finds them and making the best of them. While light falling at an angle of forty-five degrees is rightly considered as standard because employed quite generally by our brother artists of the brush, it must be remembered that we are in the habit of seeing people in a light having a more decided angle when meeting them in ordinary rooms. It should also be borne in mind that a pose that would appear

HOME PHOTOGRAPHY



AN EXAMPLE OF HOME PORTRAITURE

perfectly natural in a subject depicted in an easy chair amidst home surroundings would seem rather unsuited if permitted in the ordinary studio portrait.

While I advise and practice the carrying of backgrounds, the home portrait worker should use them only when the walls and furnishings of the rooms make so doing advisable. Even when that portion of the room directly behind the subject appears to be somewhat distracting, care in seeing that it does not receive too much light will cause it to come out quite subdued and pleasing. Frequently one can pose the sitter just outside an open pair of folding doors with the room

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behind somewhat darkened by drawing the curtains. This will give a good effect of a dark background having distance and depth and a background that cannot show any shadow of the sitter from the flash. Judgment should be used in selecting home backgrounds to see that nothing jars in the composition. One should include as little furniture as possible, only that necessary to give the picture the home effect. It is a mistake to spot out handsome furniture and feature it. Concentrate on the subjects, because what you succeed in getting of them is what influences the orders.



AT HOME PHOTOGRAPHY—A PLEASING GROUP

Some of the best home workers in the country work by daylight exclusively, even making large groups by window light. I personally know of a number of failures on groups, failures made by a fine operator unfortunately wedded to this method, groups that would easily have been made successful with flash exposures. It is only rarely that a subject objects to the flash after a demonstration has shown the slight noise made when using one of the modern flash machines, in which the small amount of powder used (a mustard spoonful being sufficient for a full-length figure at $f-4.5$), the explosion, only a slight puff, is negligible. It may be of interest to specify the outfit I have settled on after four years' experience, namely, the Halldorson. For convenience and cleanliness it is all that can be desired. It folds up most compactly and the cloth backgrounds can be folded and strapped to it, forming an outfit of only one unit.

The other unit is the camera case containing everything that is needed. My own is one that I had made by a trunk factory, so arranged that camera,

plate holders, lens and small paraphernalia all fit snugly; and furthermore, it does not look at all like the conventional camera case. By using portrait films I can, owing to their lack of weight, carry eight double holders and several dozen extra films, and weight is an important item if outfit has to be carried any distance. The photographer taking up home portrait work seriously should have a small car, if possible, to get about with ease and comfort. An anastigmat lens is of course necessary, being suitable for large heads as well as for home effects in which the lines must be straight. My Wollensak Velostigmat has always done all that I have required of it and no lens could do more.

If any interested readers desire further or more detailed information on any particular feature of home portrait work, I shall be glad to respond up to the limit of my knowledge. Write me, care of the editor, and if necessary, I will reply in a second article covering such points as readers may want made clear.



Concerning Gaslight Papers

By William Albert



In less than the score of years since it was put on the market, gaslight paper has forged its way to the very first rank of popularity as a photographic printing process. As far as the amateur is concerned, it is far and away the most popular of all, having almost completely superseded the once-beloved printing-out papers in his favor. The celerity and ease of its manipulation, and the fact that it is possible to use it regardless of conditions of weather or light, perhaps account for much of this. To the old-timers, the best developing-paper print cannot equal the best work on printing-out paper, properly printed and toned; but the possibility of acquiring a fair proficiency in the handling of gaslight in quicker time than one can learn the correct manipulation of Solio or similar papers has endeared it to many.

In my estimation, another great factor contributing to its popularity is the fact that it will generally give a more brilliant and snappy print from any given negative than will printing-out paper. When we compare the flat and lifeless results that often characterized amateurs' prints in the days when gelatine-chloride or albumen was king, to the average exhibition of the present day, there is a marked difference. Undoubtedly, many of the tyro's efforts today are a swing to the opposite course of the pendulum and "make the judicious grieve" by their glaring harshness; still, of the choice of two evils, I believe I would choose the latter, in preference to the dull monotony of much of the old-time work. And I am not alone in this view—I have, by securing the opinions of many persons in various walks of life, persons totally unversed in photography, found that the sentiment in favor of brilliance as opposed to exquisite modulation of tone was almost universal. Show the average layman two prints on different papers from the same negative, one in just the right balance of tone, with glowing softness and atmosphere, and the other more contrasty or perhaps even harsh,

and at least ninety per cent of your audience will choose the latter. This is right and proper: as long as humanity loves brightness as opposed to gloom, and as long as nature turns instinctively to the light, just so long will this love of brilliant pictures continue.

But this is decidedly off the track; this article was to deal with gaslight papers. I have in late years used many sorts of them, all American varieties, many English ones, and some of German origin, and find they are nearly all easier to handle than the makers' printed instructions would imply. For instance, these instructions almost invariably demand the use of an acid fixing bath, yet I have not found such a bath at all necessary to success under average conditions. No doubt in a hot climate it is a decided advantage in avoiding blistering, etc., but in the temperate zone, where the majority of us live, I find it generally superfluous. A fresh, plain hypo bath, strength about one in six, answers admirably in most places, while obviating the trouble and expense of preparing an acid bath. Formerly I used a short-stop solution between my developing and fixing, one consisting of a few drops of acetic acid or vinegar in a tray of water, but even this is unnecessary except in warm weather or in cases of over-exposure. A word of caution here: when using this acid short-stop, it is wise not to transfer too much of it along with the print into the hypo. The best way is to hold the print out of the bath for a few seconds until it drains off, then immerse it completely in the fixing bath. Often, especially in cool weather, I fail to trouble myself about any extra bath between developing and fixing, but transfer the print directly into the hypo after draining off the surplus developer, taking, however, care to immerse it quickly and completely in the latter. But this course is somewhat risky and I would not advise its indiscriminate use. In warm weather, to prevent too rapid an action, I usually make the developer only two-thirds or one-half the strength called for by the printed formula, only following the formula exactly in cold weather, in order to facilitate development. The makers lay great stress on the use of strong solutions in developing, but after many trials and experiments I have been unable to find any practical difference between the finished prints made in solutions as per formula and those only half as strong.

Many amateurs will withdraw a print from the developer several times in order to see if it is developed far enough, and then wonder why the resultant print is imperfect; the answer being: too much contact with the air. Keep your prints submerged all the time, either in the developer or fixing bath. While the print is developing, contact with the air will quickly stain it yellow or brown; and later, when saturated with hypo, contact with the air will reduce a print and make it raw. Be sure to lose no time in transferring a print from one bath to the next, and you will find many of your troubles obviated.

The yellow stain mentioned above is perhaps the beginner's most common difficulty. It can, of course, be prevented by adding a few drops of bromide to the developer, with a slight increase of exposure. But even experienced workers, on leaving a print too long in the bath in an attempt to force development, occasionally have these stains. I remember when I was learning to use gaslight papers, stained prints used to come in shoals, prompting me to try several experiments calculated to prevent them. I tried bleaching with indifferent success, and

CONCERNING GASLIGHT PAPERS

then the brilliant idea of immersing them in a fairly strong bath of sulphuric acid occurred to me. This seemed an unqualified success; and, in my joy at having rescued the prints from a saffron perdition, I framed several of them. Alas! Within a week they had faded entirely away, "like the snowflake in the river." By accident, rather than by design, I later discovered the real remedy for these yellow stains. While developing one day, I found several stained ones in the batch and left them in the hypo some time, intending to throw them away. When I returned from dinner, to my surprise the stain had disappeared, and in later experiments I found that this was the cure for all but deep brown stains. An immersion of thirty minutes to an hour in a strong, fresh hypo bath will remove any ordinary yellow stain. I have never seen this recommended in print anywhere until recently in *CAMERA CRAFT*, and then, in my estimation, the writer did not sufficiently emphasize its great usefulness in saving many otherwise useless prints.

Another point upon which the manufacturers dwell is the necessity of a long washing after the fixing bath, recommending an hour or even more. This is all very well to impress the tyro with the necessity of thorough washing, but I never wash gaslight prints more than fifteen minutes. The point is, not how long, but rather how well the prints are washed. To chuck a dozen or more prints face down into a basin and let the water run in for an hour is not washing them correctly. Some years ago, Messrs. Lumiere of France published the results of experiments they made along these lines. They found that a dozen 5x7 prints could be thoroughly washed in a quart of water, every trace of hypo being removed. Their method was simply this: to pour into a tray just enough water to cover all the prints, and put them in, one by one, face down, pressing each print down with the open hand. From six to eight complete changes like this, requiring only a few minutes for a dozen prints, removed every trace of hypo, as they proved by chemical tests. By the way, I no longer go to the trouble of titrating my wash water in testing it for hypo. A quicker way is to touch the wet print to one's tongue, one soon learning to detect hypo by the taste.

Now a word as to permanence of prints. I believe that if we make photographs at all, we ought to make them to last. During several years I have thoroughly tested every dodge recommended in this article and can guarantee every one, excepting of course the bleaching and sulphuric acid baths, as furnishing a print that is as permanent as any gaslight print can be. I have repeatedly tested prints, made according to above instructions, as to their permanency. Some have been exposed to glaring sunshine in a show window for a year with no appreciable change except a slight yellowing of the paper that is entirely unavoidable, and occurring with any photograph under like conditions, no matter whether made by silver or platinum process. Some writers have attempted to cast doubts on the permanency of gaslight prints, but as far as my experience goes, they are fully as enduring as any other form of silver print.

Why suffer with ingrowing toe nails? A year's subscription to this magazine costs you only one dollar.



Persistence and the Photographer

By Chas. I. Reid



Advertising has made a great number of successful businesses in all lines, and yet there are many business men who look with doubt and suspicion on this method of increasing their business. The reason is easy to find if one only remembers the great number of itinerant advertisers in all lines of business, the photographer's business included. The largest and most successful businesses in all lines have been built up, not through advertising, but through persistence in advertising. Whatever the plan adopted to advertise a photographic studio, it should be carried out, not in a desultory and intermittent manner, but with a lot of persistence. One squeak of a mouse in a dark room will not enable us to catch it, but if the squeak is repeated at regular intervals, we can soon locate the source. The same with studio advertising. One advertisement does not make any effective impression, but if the advertising is coupled with persistence the prospective customers will see the advertisement again and again, with the result that the name of the advertiser will be fixed in their memory, and when thinking of photographs, they will remember the advertiser and his promises and will naturally turn to his studio to have their pictures made.

Having brought the customer to his studio, the photographer can then prove or disprove his advertising, and if he can deliver the good work promised, and perhaps just a little more than promised, he will have twelve more prospective customers. Desultory advertising is much worse than no advertising at all, as it gives an impression of uncertainty about the photographer and his business methods. No photographer need go far to find out the truth about this element of persistence in advertising methods. He cannot open a photographic magazine without also noticing the announcements of the successful manufacturers of photographic material, and it is a well-known fact that the persistent advertisers in this line are also the most successful manufacturers.

The principles of success in advertising are the same whether one sells raw material or a finished product. The photographer has many opportunities for advertising his business effectively and at little expense, opportunities that are not available to the business men in other lines. The local newspapers are only too glad to publish interesting samples of his work without charge, and if the photographer is liberal in furnishing the papers with pictures of local happenings, the publishers will retaliate with free reading notices which are by far more effective than paid advertising. This does not mean that paid advertisements are not to be included in advertising plans, but on the contrary, they should be used and used with persistence. It is by far better to use a small advertisement, one within the means of the advertiser, in every issue of a publication, than to use large spaces and use them only at intervals.

The mailing list, too, should be followed up with persistence, and persistence

PERSISTENCE AND THE PHOTOGRAPHER

should be used to keep the list up-to-date. The local motion picture theaters should have lantern-slide samples of the photographer's work, and these should likewise be used with persistence. Like every other kind of copy, they should be changed as often as possible. Mixing is another form of good advertising. The photographer should take an active interest in the affairs of his locality and let the people know that he is a photographer by mixing and getting acquainted with them at every opportunity. He should take an interest, not only in his own work, but also in the work and hobbies of those around him. People will often come to the studio of the photographer with an interesting personality



THE CORNER OF THE PASTURE

just to talk, and have their pictures taken as an excuse. Talk to a man about his hobby and he is yours, but talk about your own hobbies or work and he becomes only polite. For that reason, the good talker is the one who also knows how to listen.

And, in using other forms of advertising, do not forget the most important form of all, quality in the work turned out. If one cannot produce good work and do effective advertising at the same time, he should employ some one to do either the advertising or the work. One should take an active interest in improving the quality of his work and hold the producing end of the business up to the top notch of efficiency, doing it with persistence. A dozen photographs often go into as many different homes, and no matter how effective one's other methods of advertising may be, if the work is poor, the advertising only serves as a reminder of that photograph made by you.

To make a success of one's business, it is necessary not only to get the customers, but to hold them. Quality in advertising is important as well as quality in the product. If one makes good photographs, he should not attempt to sell them through poorly worded copy or poor advertising literature, but he should demand the very best that can be produced. And, after one has used the

CAMERA CRAFT

usual methods of advertising, it is well to remember that originality attracts attention and if a new plan can be invented, so much the better, particularly if it is a good plan and includes persistence.

Be consistent as well as persistent. The public holds the advertiser responsible for all claims, and if one knows a thing to be so, he should have the courage of his convictions and say why it is so. Once let the public learn that the advertiser's statements are true and consistent, and he has secured one of the most valuable assets on his books. No one can build a permanent business on exaggerated claims, for exaggeration is a very flimsy foundation and one that is liable to succumb at any moment. Enthusiasm is another very valuable asset and one that has built many a successful business from a small beginning. The enthusiasm that builds big businesses is not the uncertain and intermittent kind, and the wrong kind of enthusiasm will not enable one to achieve success any more than will the wrong kind of advertising. Quite recently a certain man has tried to sell me stock in three different million-dollar enterprises. This man has lots of enthusiasm, but it is of such a kind that he is regarded as a joke among business men. The right kind of enthusiasm, however, rightly backed up, will enable one to achieve almost any degree of success.

The sense of beauty necessarily underlies the spirit of art, and doubtless gives the primary impulse to all who desire to record the sights that have impressed them. Like the sense of humor, it seems to defy analysis. Both, undoubtedly, are closely bound up with temperament, are found in different people in varying degrees, and have the common faculty of inducing new emotions that take us out of the commonplace. Humor has been explained as an excitation of unaccustomed sensations, causing a flow of energy in new channels to the general awakening of joy. Beauty has been said to result from the gratification of a love of order, instilling a feeling of rightness. It has also been associated with an hereditary intimacy with Nature, the bequest of primeval man.—ANTONY GUEST.



How One Can Sell His Photographs

By Harry F. Blanchard



With Illustrations by the Author

It has been said that the right photograph, placed with the proper editor, can be cashed as easily as can a check handed in at the bank, and I candidly believe the statement is absolutely correct. But the photograph must be the right one or at least one of the right kind. I have advertised for photographs for the last year, only to find it practically impossible to get what I want. It seems, at least with me, to be almost fruitless advertising. For example, I



A GAME OF MARBLES

I realized ten dollars each for these subjects just because they told a good story.



SOME CIRCUS PERFORMER

advertise that I want child-study photographs, finished on glossy paper, not smaller than 4x5, if larger the better. Nine times out of ten I am sent a lot of dull-finish pictures or even blue prints, still smaller than 4x5. Of course I am obliged to return them on account of both their small size and because they will not make good clear halftones suitable for magazines or other publications, even if the subjects are pleasing.

In my advertising I have found it particularly difficult to secure photographs that were really suitable for farm paper covers. For example, a well-advanced photographer wrote me asking what kind of pictures I wanted for the publications I had in mind. I immediately replied that I desired prints or enlargements on glossy paper, ones that were quite sharp and clear, in size not smaller than 8x10; and, as they were to be used for cover illustrations for farm papers, the subjects should be agricultural in character. In good time I received six enlargements of the required size, beautiful pictures to hang on the walls of a home, but entirely unsuited for cover illustrations and especially inappropriate as farm paper covers. Out of the lot of six there was only one that could rightly be called a farm subject, a brook with two cows drinking therefrom, the other five being landscapes that would not find a place on the cover of a farm



THIS IS THE HEAVIEST

Orange Judd Company paid five dollars each for these for farm paper covers.

WHICH DO YOU WANT?

publication once in five hundred times. The enlargements were not on glossy paper, but on a velvet surface, and they were not at all sharp and clear, the maker evidently having tried to produce something in the way of atmospheric, soft effects. They were excellent examples of artistic photography, but they were not in the publication class. As I said before, photographs for any kind of publication purposes should be sharp and clear, and if possible, printed on glossy paper. Once in a while a semi-glossy print will answer, but it is never quite so good as it would be were it on a smooth surface.

Of course it is sometimes almost impossible to get farm subjects arranged so that they will have a suitable background. In such cases one is compelled to make the exposure with things as they happen to be, endeavoring to get the figures so attractively arranged that the editor will overlook the background by reason of the subjects being so well posed that they catch and hold the attention. Rather, he himself is quite sure to notice the poor background, but he will reason that the reader will not, and he therefore accepts the picture as suitable for the cover of his publication.

In some cases, when an editor likes the composition and arrangement of the subjects, but does not like the background, the halftone maker can remedy matters by taking out the offending background and putting a suitable one in its place. While this can be done, it is costly and the result is not always satisfactory. If one can possibly arrange to have suitable backgrounds in his pictures, he will be well repaid for his trouble, as the least work that has to be done on a photograph the better chance it has with the editor.

HOW ONE CAN SELL HIS PHOTOGRAPHS



BABES IN THE WOODS **WHISTLING HIS THOUGHTS** **ON CHRISTMAS MORNING**
I realized ten dollars each from these negatives from Sunday-school papers, and later sold the negatives to advertising firms for five dollars each.

And, above all, do not try any of those soft, misty effects, as they will not pass with the editor of a farm publication. One might make one of the most beautiful agricultural genre pictures that was ever produced, but unless it be sharp and clear, he will have wasted his time and efforts, at least as far as having it published on the cover of a farm paper is concerned.



THE ONE THAT GOT AWAY
Three Sunday-school papers paid me five dollars for prints from this negative, as did the Kaye-Mann Company, of Detroit, who used it for advertising purposes.

Well, it may appear that I am getting away from my subject and as a reader you may say you have been told all this before. Please believe me when I say that the point is one that needs a lot of consideration. When one reads an advertisement stating that some particular firm or paper manufacturer wants certain kind of photographic illustrations, one cannot expect them to retain any kind of pictures that he might send in. They want what they want, when they want it. When one sees an advertisement asking for photographs, it is printed because the advertiser has a special and an immediate use for them. Consequently it is advisable to send in promptly just the kind of photographs asked for, as nothing else will do.



THIS PICTURE I CALL MY BANNER SNAP—it won the Third Prize of seventy-five dollars in the Eastman Kodak Company's Annual Contest.

Illustrations often explain better than do words, so I may be pardoned for showing several examples of what I might call successful, because salable, pictures, together with data covering their production. These will enable one to see about what the magazines want and will use. All were taken with an ordinary rapid rectilinear lens and made on 5x7 plates.

The camera lens and six plate holders, the complete outfit with which these pictures were taken, cost me twenty-five dollars. This goes to show that one does not require an expensive outfit to do extra good work. However, the most successful pictures are made with a lens of the anastigmat type, costing from eight to ten times as much as does the rapid rectilinear lens. The one with which these illustrations were made cost about six dollars, shutter and all, while an

HOW ONE CAN SELL HIS PHOTOGRAPHS

anastigmat lens of similar size would cost about fifty or sixty dollars. For this kind of work I very seldom use an opening larger than f-8 and I stop the lens down to f-32 whenever possible, as I can then make 11x14 enlargements suitable for magazine covers, these last bringing a much higher price than the small photograph.

In the matter of exposure, I must confess I am not very much given to hair-splitting exactness. I prefer, as long as results are satisfactory, to burden myself as little as possible with anything that requires attention aside from the subject itself. I can only give you the shutter speed and opening which I



always use, either winter or summer,

READING THE NEWS—A picture that brought me in dollars.

and with me it always works out perfectly satisfactory for both enlargements and contact prints. For a group of people or similar subject that nearly fills the plate, posed in the shade or containing considerable shadow, I use f-8 stop and give one-fifth second exposure on a Seed 30 or Cramer Crown plate, and I get a fully timed negative every time unless the day is extremely dark, then I give one-half second. If I wish to make the same kind of a subject with a smaller opening and the same kind of plate, I stop down to f-32 and give from one-half to one second. I find that either of these exposures always results in good negatives.

The picture of the boys playing marbles and the one of the boy on the stump telling how large the fish was that got away, were both taken in bright sunlight, stop f-32, Cramer Crown plate, one-half second exposure. They were developed



GOOD FISHING

The Ansco Company paid me five dollars each for these negatives to make prints from showing how pictures look on their different grades of paper.

SOME PUMPKINS

in an Eastman plate tank with pyro developer and printed on a soft paper so that the highlights would not be too harsh.

It may seem queer, my giving one-half second in the shade and then turning around and giving the same exposure in bright sunlight, but the truth remains that had I given a shorter exposure to the group in sunlight, the shady portions of the face and body of the principal figure would have printed almost jet black, spoiling the picture. I expose for the shadows whenever possible, allowing the highlights to take care of themselves. Pictures taken in this way should be printed on a soft grade of glossy paper when intended for illustration purposes. except, if they are to be sent in to a daily or other publication that is printed on the cheaper or rough-surfaced paper, it is nearly always advisable to send more contrasty prints, as they reproduce best in newspaper work.

The reason that this article is illustrated with child subjects is because they are the easiest kind of genre pictures to secure. However, if one is fortunate enough to be able to get good genre studies with older people as subjects, these, if well done, will have a more ready sale.

The story-telling quality of a photograph is what counts with a publisher. One can take a dozen plates and fire away at different groupings of children or grown-ups, and, unless lots of pains are taken to get some sort of human interest into the arrangement of the subjects there would hardly be more than one fairly composed picture out of the lot. The photographer might wonder why more of his pictures did not sell, but the simple reason is that the composition does not tell a story, the picture lacks that element that makes it interesting. Composition

means arrangement and this last means the securing of some definite effect. Unless the photographer knows what he is trying to secure, he cannot hope to make good story-telling photographs. Only once in a while is a good genre picture secured by mistake; that is, without definite aim.

One should study the requirements of each and every kind of publication he may try to supply with pictures. Before sending in a lot of prints to an editor, one should try to find out if that individual will be likely to find use for them by buying a copy of the publication and examining it closely to see if it is using any illustrations similar to those one has to offer. By this I mean the same kind of subjects; then, if one thinks that he has the material, he should send it in to the editor's office. If they be good, clear, glossy prints and the editor is wide awake and appreciates the subjects, he will possibly make a reply within a few days after they reach his desk.

In this article I have tried to show, mainly through the illustrations furnished, the kind of pictures one should make in order to be able to sell them to publications. In my next article I will try to give the reader some idea as to the kind of pictures the technical journals want, again using as illustrations a few of my own photographs that I have considered successful because they found a market.



The Use of Color Screens

By B. F. Loomis



With Illustrations by the Author

Since the first eruption of Lassen Peak on May thirtieth, 1914, more than a hundred camera users have brought their outfits of various descriptions to this point and "fired away" at this interesting subject. Some secured pictures,—good, bad and indifferent; while a large number secured only experience. Some of these, fairly well versed in photography, told me that when the peak was covered with blue ash, it blended into the sky so completely that it was almost impossible to photograph it successfully. Of course, they were using ordinary plates or films and using them without a ray filter or a color screen. Some few succeeded in getting good pictures of the eruptions without employing color screens, but these were the exceptions. Color screens are always beneficial, and frequently indispensable, especially when the view is a very distant one, and the greater the distance the darker should be the ray screen used. Cloud effects are best obtained with quite dark screens, although they have the disadvantage of rendering the blue sky very dark. A light screen gives pleasing landscapes, while much of the clouds is lost. All the pictures accompanying this article were made with a deep orange, Bausch & Lomb ray screen (commonly called a "three-time" screen), with the exception of the one copyrighted in 1914, on which was used a light yellow screen, the "medium" of a Goerz set.



MT. LASSEN FROM ANDERSON, CALIFORNIA

While taking the picture, "Mt. Lassen from Anderson, California," the mountain being some fifty miles distant, a lady asked me what kind of lens I was using. I replied: "A Bausch & Lomb Zeiss." She then explained that she was working with a Seneca, that she had tried several times to get a picture of Mt. Lassen from that point, but had never had any success. Some one had told



ERUPTION OF MT. LASSEN, JUNE 16TH, 1915—Copyrighted 1915 by B. F. Loomis. Two seconds' exposure, f-22, B. & L. orange ray screen, Cramer's Instantaneous Iso plate.

THE USE OF COLOR SCREENS



TOP OF LASSEN PEAK, LOOKING TOWARD MINERAL POINT—Site of Look-out House battered into splinters by the eruption of October 17th, 1914.



ERUPTION OF MT. LASSEN, JUNE 9TH, 1914—Copyrighted 1914 by B. F. Loomis. Made on Instantaneous Iso plate, Goerz medium screen.

her that her lens was not *strong* enough. She then brought out her camera, equipped with a beautiful 4x5 telephoto lens. I assured her that her lens was just as strong as anybody's, and explained that the cause of her failure was no doubt due to the fact that she was using an ordinary fast plate without a ray screen, making it practically impossible to get the pictures with even this excellent equipment. I further explained that when the ray screen is used it is best to employ color-sensitive plates; and, if the view be a very distant one, a double-



PATH OF THE FLOOD FROM LASSEN PEAK—Copyrighted 1915 by B. F. Loomis. The timber which once covered the foreground has all been swept away. Two seconds' exposure, f-22, B. & L. orange ray screen, Cramer's Instantaneous Iso plate, May 22nd, 1915.

coated plate is even better. This particular picture referred to I made with a Wratten & Wainwright Panchromatic, a double-coated, color-sensitive, backed plate, and eight seconds' exposure was given at f-45. These plates, on very distant telephoto views, give better results than anything I have tried, but on near views, those made around the volcano, I had better results with Cramer's Instantaneous Iso plates. I do not mean to say that other makes of similar plates are not just as good. Many excellent brands I have never tried, but I can safely say that Seed's 26X for general use, Cramer's Instantaneous Iso for cloud effects and nearby mountains, and the Wratten & Wainwright Panchromatic for very distant telephoto work, make a splendid trinity that, in my hands, meets all requirements; at least, that is my verdict after some fifteen years of experience.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

MAKING OUTDOOR PICTURES FOR PROFIT: My long experience in the photographic business impels me to make a few suggestions that may assist the reader who desires to make pictures for profit. It is all right for the advanced amateur to go out to the park, or even further afield, and shoot away his plates or films on more or less pleasing views, if he can afford it. But the average worker finds it all right for only about three or four choice views, and possibly he can make such pictures suitable for the newspapers and magazines. Again, if one has a good 5x7 outfit, with sufficient plates, he can often pick up, among the host of people who visit the parks and other public resorts, requests for "pictures" of small groups and the like that will afford a number of orders for prints therefrom.

There is also money in street work, providing one has a good 5x7 view camera with a $3\frac{1}{4} \times 5\frac{1}{2}$ or post-card back fitted. Such a camera makes a complete outfit, as the $3\frac{1}{4} \times 5\frac{1}{2}$ plate is the proper size for post cards, upon which all kinds of subjects can be made, including everything from a single portrait to a family group. The 5x7 plate is the ideal one for store fronts, residences, factory groups and the like. These last are best made about five in the evening when the men are dressed up and ready to go home. I have used an 8x10 camera for this kind of work, but if one has only a 5x7, he no doubt can make as much, because the pictures will sell more readily on account of their lower price. The office help should be placed in front, the ladies all seated, and one must not overlook the proprietors. These last should be seen and solicited for an opportunity to do the work. One must give them a few pictures free of charge, as this will induce them to put men to work arranging seats for the group. Have a row of chairs

PARAGRAPHS PHOTOGRAPHIC

in front, next a long plank with its ends resting on two barrels, and the third seat, if another is necessary, elevated about the same distance above the second. A good picture can always be secured by taking a little time in arranging the group. If one will do this and also take pains to properly develop both the plate and the prints, he will have no trouble in getting a large order.

When soliciting a chance to do such work, I always had some good samples to show the people and found that it was only necessary to produce the quality of work demanded and they were perfectly willing to part with their money. On good days during summer and fall, the street worker must hustle out early and work late, but by no means waste plates making exposures between eleven a. m. and two p. m., as there are then too much top light and too short shadows. As the shadows get longer, the lighting is better for pictures; the best group picture I ever made was exposed about five-thirty p. m., or just before sundown. The ideal position for an outdoor group is facing the north, with those making up the group seated on the front steps or in the shade of a building.

For my own work I have been using Stanley plates, mainly because their formula for pyro developer is so handy and convenient to use. Makers of other plates would do well to publish a similar one in their formula sheets. Only three sixteen-ounce bottles are required to mix up the necessary stock solutions, with which one can so easily alter the proportions to secure the best results from his exposures and bring out the best the emulsion will give. The formulæ for the three stock solutions are as follows:

A: Water	16	ounces
Potassium metabisulphite	90	grains
Pyrogallic acid	1	ounce
B: Water	16	ounces
Sulphite of soda.....	1½	ounces
(Hydrometer test 60)		
C: Water	16	ounces
Carbonate of soda.....	1¼	ounces
(Hydrometer test 40)		

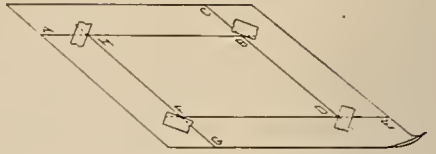
To develop, take one ounce of each of the stock solutions and seven ounces of water. Care should be taken to avoid, if possible, the use of water from a well or spring, as such is frequently inclined to be very hard, and when so, is not well suited to the making up of a developing solution.

For my printing paper I use glossy Cyko; and, after washing, I squeegee onto a ferrotype plate that has been well dampened. After placing the wet print face down on the plate, I cover with a blotter and go over it with a roller squeegee. Prints so finished sell better and I find my customers always prefer them to dull finish work. While the new Cyko formula is very simple and convenient, I am quite particular in making it up

This last, and the proper timing of the exposure in making the prints, I believe are most important.—G. S. Smallwood, Chicago.

CUTTING MASKS WITH A PRINT TRIMMER: The cutting of masks with the sides of the openings perfectly parallel and true is, when gone about

in the usual way, more difficult than it would seem. In order to secure true and clean corners, the usual practice is to cut a little way into the mask and then cover these extended cuts, and also strengthen the corners, by placing a bit of gummed paper or lantern slide binding diagonally across their outer edges. Doing this gave me an idea I could use my print trimmer to make the cuts forming the sides of the opening and thereby assure perfectly right angles at the corners and perfectly parallel sides. To cut a mask, first trim the opaque paper to the proper outside dimensions. Then cut from A to B, cutting a little beyond the line C D, placing sticker at I; next cut from C to D beyond E F, placing sticker at J; the next cut is from E to F, beyond G H, with sticker at K; the last cut being from G to H, beyond line A B, with sticker at L; and, as the first or I sticker has been cut, another should be placed at that point.—W. H. B., Maine.



TO PRINT ON MARBLE: Coat an unpolished plate of marble with the following solution:

Benzine	500 parts
Spirits of turpentine.....	500 parts
Asphaltum	50 parts
Pine wax	5 parts

When dry, expose under a negative, which will take, in direct midsummer sunshine, about twenty minutes. Develop with turpentine or benzine and wash in plenty of water. Then cover the plate where it is intended to be left white with an alcoholic solution of shellac and immerse the plate in water which is colored with any dye which will dissolve in water. After a while, when enough coloring matter has entered the pores of the stone, it is taken out and polished. The effect is said to be very pretty.—T. E. P., California.

TO REMOVE FOG: If the negative you have just developed is fogged from any cause, reduce it with red prussiate of potash and hypo until it is too thin to produce good prints; then thoroughly wash and strengthen by first putting into a strong solution of bichlorid of mercury until the image has become quite pale, when wash and immerse in a weak solution of sulphite of soda until the plate has lost all the whiteness given it by the bichlorid and it looks clear in every part. All the fog will have disappeared and the negative will be a good one.—T. E. P., California.

SHOWING PROOFS: The photographer will do well to avoid any danger of showing his customers proofs that he may not be able to equal with the finished print, as so doing is quite sure to cause disappointment, while, on the other hand, the delivery of prints that are plainly better than the proofs shown always create a good impression. If there is any doubt on the part of the photographer in this matter, he should make his proofs on a different grade of paper and on a grade that will not give quite as good prints as the grade on which the finished product will be turned out.—J. B. W., Ohio.

CAMERA CRAFT

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No. 3

That Competition of Ours

As announced in a recent issue, the closing date of our Farm Paper Cover Competition was set for December thirty-first last. This we found was a rather inopportune time for getting together a jury, and it was not until the February issue was practically printed that we succeeded in getting together three competent local men to select the winning picture. One of these gentlemen has been identified with an agricultural publication for a number of years, another is an advertising man with a keen appreciation of what is "telling" in a picture, and the third is an artist who has produced, by both pen and brush, some very effective magazine covers.

The poor showing made by the pictures sent in has caused us to abandon our original idea of reproducing the best, there being none that really came up to the requirements of the average farm publication, despite the fact that over twelve hundred prints were received, including many worthy of salon honors. Our jury, in response to our request that at least the nearest approach to a desirable picture to grace the cover of a farm paper be decided upon, selected one, by Miss Belle Johnston, of Monroe City, Missouri, and we have forwarded her our check for five dollars as an award.

Our lack of success in bringing to light pictures of the kind indicated had about discouraged any repeated attempt along this line, when a letter came from one of our readers, an old correspondent, who put the matter in a little better light. He explained that it was only when the closing date was near at hand that he obtained a clear idea of just what was wanted and by that time winter was upon him, rendering the making of suitable negatives practically out of the question. Then another letter came, and a third, and still others, all of like character: one reader going so far as to suggest that we seemed ignorant of the fact that our own winter sunshine and flowers were not characteristic of the Eastern States. Therefore, a new competition is announced below, and we trust most sincerely that we may be able, at its close, to reproduce some excellent prize-winning pictures and to learn that our efforts to promote interest in this line of work have resulted in added interest and enjoyment for at least a few of our readers.

Our New Competition

Like the one just closed, there will be no rules or restrictions. We want our readers to show what they can do in the way of producing pictures suitable for cover illustrations for farm papers. Send contact prints from negatives of a quality that will permit of sharp, clear, 11x14 enlargements being made therefrom. While we will not undertake to return any prints, we assure senders that no use will be made of their pictures except as we may wish to reproduce a few in small size to show what is being submitted or to more clearly define what is

wanted. In this issue is an excellent article that gives many good hints on the subject, and in our next we will advance a few suggestions of our own. The closing date will be announced later and awards, if other than a simple announcement of the best pictures, will be most modest. We are not asking our readers to enter their prints in this competition in order to win a prize from us. We want to encourage them to take up a line of work that is eminently suited to the opportunities so many of them enjoy, to the end that they may win their own approval of effort intelligently put forth, to say nothing of the reward the actual sale of suitable pictures may bring.

Farm Scenes Wanted

Harry F. Blanchard, whose excellent article appears in this issue, is at all times besieged with a few more orders than he can himself supply, having only spare time to devote to the work. He has, at the present moment, demands for about twenty-five good pictures of farm scenes, 5x7 or larger, and he desires to purchase the negatives of such as he may select as suitable. He particularly wants to secure a good negative of some cows or sheep near a stream of water, either as an upright or a horizontal view. Mr. Blanchard, we are certain, is perfectly trustworthy and reliable; and, while he may not be prepared to pay any fancy prices, our readers can feel quite sure of fair treatment and the return of any prints they may send for his approval if they will but enclose postage for the purpose. However, we would suggest that he can hardly care to consider other than good prints of good subjects of clearly agricultural character, 5x7 or larger, that have not as yet been published. Story-telling pictures, those containing human interest elements, are no doubt what he requires.

George Murphy Again In San Francisco

Once more, after the lapse of three or four years, we have had the pleasure of a visit from the genial dean of the New York dealers, George Murphy, of 57 East Ninth Street, that city. Despite his serious illness of some months ago, Mr. Murphy appears in the best of health and spirits and reports improved business in the photographic line as fully confirming the promised increased prosperity throughout the country. He is, together with his most estimable wife, spending several weeks at the home of their son in this city. Between his large circle of friends and his wide business acquaintanceship, if indeed the first classification does not cover them all, he has been kept quite busy, a situation that he seems to enjoy to the fullest extent.

Defender Representatives Goes Abroad

W. H. Salmon, of the Defender Company, sailed, the latter part of January, for Europe for a four months' stay, in connection with the interests of the Defender Photo Supply Company, of Rochester, New York.

I do the very best I know how—the very best I can; and I mean to keep doing so until the end. If the end brings me out all right, what is said against me won't amount to anything; if the end brings me out wrong, ten angels swearing I was right would make no difference.—A. LINCOLN.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

The Simple Arithmetic of Enlarging

In the following notes I propose to put the practical part of enlarging in the simplest possible form, so that anyone who knows the first four rules of arithmetic can answer his own questions himself.

The first thing to be clear about is that the scale, degree, or ratio of enlargement is practically always reckoned as "diameters." Suppose we have a quarter-plate, which we will reckon as 3x4, and wish to enlarge it to 6x8. Thus each of the dimensions, length or width and height, is just doubled or enlarged two times; this would be called two diameters, although you could cut a 6x8 piece of paper into four pieces each 3x4. Again, 3x4 enlarged to 9x12 would be three diameters, or three times linear, as it is sometimes called. Or we could say the ratio or scale was three to one.

Now suppose we arrange our apparatus to give a three-times enlargement, i. e., 3x4 to 9x12, and yet only use a 6x8 piece of paper for part of the picture, still we should say it was a three-times linear enlargement. We do not reckon by how big the enlarged print is, but by how big it would be if the whole negative had been used.

Having settled the ratio or scale of the enlargement, the governing factors as regards distance of lens to negative on the one side and lens to print on the other are the focal length of lens and total available distance. For instance, suppose the desired ratio to be three (i. e., three diameters or linear), then the lens to print distance will be three times the lens to negative distance, whatever the focal length of lens may be. Get this point quite clear in your mind; viz., the ratio or proportion of lens to print distance compared with lens to negative distance is always the same as the linear size of print to that of the negative. We are here assuming by print size the full possible size of the negative.

Now here is a simple and general rule: the

lens to print distance is ratio plus one times the lens' focal length. Suppose, as just stated, the ratio is three and the focal length of lens five inches. Then the lens to print distance is three plus one, i. e., four, times focal length, or twenty inches.

Do not make the common mistake and say, "Ratio plus one times focal length" is three times five plus one, i. e., sixteen; but say, three plus one, i. e., four, times five, viz., twenty.

We have just seen that the lens to print distance is always ratio times the lens to negative distance; therefore in this case twenty is three times lens to negative distance, which must consequently be six and two-thirds inches.

We now have the key to all likely problems. It will be useful to work out a few cases: I have a five-inch focus lens; what is the ratio when it is six inches from the negative? It will save time and talk to adopt the following letters as abbreviations: R=ratio, scale, diameters; F, focal length of lens; P, print to lens distance; N, negative to lens distance; B, baseboard, i. e., total negative to print distance. Obviously B is P plus N. Also P divided by N gives us R. And R plus one multiplied by F equals P. Or P divided by R equals N.

From the above it is easy to deduce a very useful formula that is but seldom met with, and which, indeed, I cannot recall having seen in print; it is $R \text{ equals } F \text{ divided by } N \text{ minus } F$. That is to say, that the ratio is the focal length divided by the camera extension beyond focal length. To take the above case: Camera or lens to negative length N is supposed to be six inches, i. e., one inch more than the focal length. If we divide focal length five by one, we of course get five, i. e., the print will be five times the size of the negative. Suppose we have an eight-inch lens twelve inches from the plate, i. e., four inches beyond focal length; then eight divided

by four gives us two, or the print is two times the negative. Suppose the same lens to be ten inches from the negative, i. e., two inches beyond the focal length, then eight divided by two gives us four, i. e., print is four times the negative.

My work bench is five feet or sixty inches long. I want to enlarge 3x4 negative to 16x20. What focal length of lens is required? First we notice that twenty divided by four gives five, so 3x4 enlarged five times is 15x20, not 16x20. In other words, 3x4 and 16x20 are not quite the same shape or proportion of length to width. Let us say the required ratio is five. Then P must be five N, or the base length is N plus P, i. e., N plus five N, or six N. Then six N equals B, equals sixty, or N equals ten, and P is fifty. Next P is R plus one times F, i. e., five plus one times F, i. e., six times F. Therefore fifty divided by six is F, or F equals eight and two-sixths. In practice—so as to give ourselves a little “elbow room” in final adjustment—we should select a lens of focal length rather shorter than the above, say eight or seven and one-half inches.

I want to mark the baseboard of my enlarger in such a way that I can read off at a glance the scale of enlargement or ratio. This we can easily do in two ways: first by noting the N distance and then using the above little-known formula. For instance, suppose we are using a five and one-half inch lens. When N is six inches, the extra distance—i. e., beyond F or five and one-half—is one-half, and this divided into five and one-half goes eleven times. When N is six and one-half, the extra distance is one, and this goes five and one-half times, and so on. In a similar way, we can scale our distances by observing P from another little-known formula: P minus F divided by F. But we are more likely to want to scale our lens to negative or N distance in such a way that we can set the apparatus for a given ratio. For instance, the lens is six inches focal length, and we want to enlarge three diameters. We can easily do this from the formula: N equals F plus F divided by ratio. In this case, N equals six plus six-thirds, equals eight; or for ratio two then N equals six plus six halves, equals nine, and so on. Or we may prefer to scale the longer distance P. This we easily get from P equals (one plus R) times F, equals F plus R

times F. For instance, with a four-inch lens and two and one-half ratio, P equals four plus two and one-half times four, equals four plus ten, equals fourteen. For this it is convenient to calculate the P distances, and then mark them on a yard stick or blind-lath. It is easier to get accuracy by scaling the longer distance P than N.

I want to build a fixed-focus enlarger for making postcards from 3½x2½ negatives, and use a five-inch focus lens, etc. First we must find the ratio R by dividing the postcard 5½x3½ by 3½x2½. Now the negative and card are not quite the same shape, the former being the more square-like of the two. We must therefore divide the shorter side of card by shorter side of negative to get a ratio which will include all the negative, i. e., three and one-half divided by two and one-half, or seven by five, or seven-fifths. Next P is (one plus R) times F: i. e., P equals F plus seven-fifths times F, or five plus five times seven-fifths, equals five plus seven, or twelve inches. N equals P divided by seven-fifths, or P times five-sevenths, equals twelve times five-sevenths, equals eight and four-sevenths inches.

I have half-plate camera with twelve-inch bellows, and 3½x2½ camera with six-inch bellows and five-inch lens. Can I use them tandem for enlarging 3½x2½ to 6½x4¾? In this case we may reckon the two sizes as being practically the same shape. Thus six and one-half divided by three and one-half, i. e., thirteen-sevenths, gives us R. Here P equals (one plus thirteen-sevenths) times five, equals (two and six-sevenths) times five, or fourteen and two-sevenths inches. N equals (one plus seven-thirteenths) times five, equals twenty-thirteenths times five, or seven and nine-thirteenths inches. So that in neither of these two cameras is the bellows long enough for use with this lens in the suggested way.—“Onlooker” in *Amateur Photographer*.

Controlled Bromoil-Transfer

I know of no photographic printing process that exercises such a strong fascination on a worker with artistic aims as bromoil does. This attraction is mainly due to the great scope this process opens for the introduction of individuality and character in one's productions. But, in my case at least, it is also due to a feeling of uncertainty—unavoidable even after two years of practice—that seldom

permits me to anticipate the completion of a picture exactly as contemplated; it is often after the second or third attempt only that I can secure the result I had deliberately aimed at. This may be a personal feeling, after all, resulting from the handicapped conditions under which I started my bromoil essays, for, as a matter of fact, I had never seen an original bromoil print nor had I watched a demonstration of the process, which was totally unknown in Egypt. I ordered the necessary materials from England, and commenced by groping my way, ever seeking assistance in the valuable text-books written by Mortimer, Puyo and Hewitt.

But this peculiar attraction is lost as soon as automatism steps in, and this is specially the case when one faces the transfer process by means of the roller-press. The feeling of pleasure gives way to painful anxiety at the expectation of what will come out of the indiscriminating machine, that, more than often, acts too powerfully where it is not wanted to, and quite inadequately where it is desired to produce strength.

It was therefore natural that experiments were attempted to try to rid the transfer operation of its purely mechanical action and to submit it to the worker's free control. The method I have adopted, besides its satisfactory results, presents at the same time the advantage of economy.

First of all, let me say that the transfer process is by no means suitable for any and all sorts of pictures; I find that for certain strong effects where darks cover large areas, the slight luster of the untransferred greasy ink gives more vigor and depth than the matt transferred pigment.

The bromide print must be light and well graduated, but without harshness, and above all not over-exposed, as there is always a danger of clogging the shadows in the pig-menting stage. The sort of developer used, and degree of dilution, are immaterial, amidol, metol-hydroquinone, or a concentrated developer such as Johnson's "Azol" used in a much-diluted form, giving good results. The print is fixed in a neutral twenty per cent hypo solution, and then carefully washed and dried.

It has frequently been said that the bromide print must be a recent one, lest some hardening in the emulsion should interfere with the proper swelling of the gelatine.

From my experience I think it is not the print, but the bromide paper, that should be of a recent manufacture; in other terms, the print may be as old as the paper itself, but the latter must have been freshly coated; hence the necessity of getting it from a dealer whose stock is frequently renewed. As for the kind of bromide paper to use, I have found that the brands that, while not glossy, have some luster about them are preferable, as the dead matt varieties seem difficult to manage. Personally I prefer Kodak's Antique, white and tinted, and Wellington's Cream Crayon smooth; these papers have, at the same time, the advantage of being substantial, thus resisting well the necessary wear and tear of the transfer operation.

On the dry print, mark with a pencil, right across the sheet, the lines forming the four limits of the final image; this will allow of an easy trimming between the pig-menting and transferring stages, as will be explained further on. Then turn over the print, place it against a window pane, and trace with the pencil, on the back, the outline of the image; this rough pencil drawing will help to guide the hand to give the different degrees of pressure during the transfer.

The print is then bleached in Sinclair's bleacher used at normal temperature and washed in several changes of water to rid it of the bulk of yellow bleacher. It is then left in a dish of water until it acquires the necessary degree of swelling. Fixing the bleached print in hypo can be entirely dispensed with; the object of fixing being only to prevent further darkening of the white silver salt, this is not necessary since the pigment alone will be carried onto the transfer paper. It is most important to find the correct degree of swelling required for each print in view of the effect aimed at; this degree is obtained by a gradual raising of the temperature of the water in which the bleached print has been left to soak. I have a jug full of hot water at hand, and pour very little of it at a time in the cold-water dish—lifting of course the print out of the dish; these successive additions of hot water must be repeated, say every five minutes, until proper relief is obtained, which will be known by experience, and is best judged by the line separating the image from its white margins, where it should show somewhat strongly. As I have already stated, a newly

manufactured emulsion swells very easily, while an old one requires considerably warmer water. During our hot summer days out here, I have been able to obtain any amount of relief, on a fresh paper, by leaving it in water at normal temperature for a longer time without any addition of hot water.

The correct swelling being once obtained, the print is carried onto the wet pad, the surface water mopped off, and the pigment applied. The inking must be done quickly, and the medium used to soften the pigment on the palette should be one of the slow-drying variety, such as Sinclair's bromoil medium. Contrasts must be exaggerated in order to counteract the further evening-up of the values in the transfer, the reasons for which have been explained by Demachy in his admirable description of his process of oil-transfer.

When pigmentation is completed, the print is lifted from the pad and placed on a sheet of clean glass, where the trimming is done; this is very easily effected with a straight-edge and a very sharp blade—I use a razor blade—cutting along the pencil lines previously marked when the print was dry, as aforesaid. The trimmed print is then lifted from the glass plate with a clean palette knife, taking care not to touch the pigment, which now comes to the very edge of the paper; it is placed, face upwards, of course, on a sheet of thick blotting paper; the dry transfer paper is placed upon it and gently pressed down to insure a perfect contact all over. The whole packet is then reversed, so that the blotting paper comes uppermost, and placed on a piece of smooth card, or better still, on a wooden drawing-board, the surface of which must be perfectly even. The blotting paper is now removed, and replaced by a sheet of strong tracing paper, that should be transparent enough to let the pencil outline of the image, drawn on the back of the print, appear clearly through it. On the top edge of the tracing paper, but at some distance from the pigmented bromide, is placed a heavy weight of some sort, such as a large book, to prevent any possible slipping of one paper on the other.

We have now come to the stage of the controlled transfer operation. Any tool without sharp edges would do for the purpose, but the best, in my opinion, is one of those small

boxwood "boasters," as used by sculptors for plaster modeling. These "boasters" are made in a number of different shapes, and the most suitable is the one having the shape of a slightly curved S; it costs only a few pence and can be purchased at any artist-colorman's shop.

Placing the left hand on the lower part of the tracing paper, the upper part of which is held in position by the weight placed upon it, I rub vigorously, with the "boaster" firmly gripped in the right hand, on the part of the tracing paper covering the pigmented print; this action transfers the pigment, and is freely controlled by the hand, as the pressure may be varied on the different parts of the image, the visible pencil drawing serving as a guide. The pressure must be heavier on the blacks in order to transfer the greatest possible quantity of pigment. I say the greatest quantity, because it is not possible to get the whole of the ink to leave the gelatine in the blacks. On the contrary, the halftones and light tints are transferred integrally without great pressure. Various effects may be obtained by this method; sketchy backgrounds are easily produced on portrait pictures, for instance. A "boaster" with a saw-like edge works wonders to produce pastel-like hatchings. One may even omit to transfer certain parts of the image, with a view to a greater concentration of interest on the strong points of the composition.

The transfer operation may be followed and eventually corrected at any moment by lifting up one corner of the tracing and bromide papers, holding down the opposite side of the latter to keep it in perfect register.

When the transfer is found satisfactory, the bromide and transfer papers are separated, and as the latter dries almost instantly, the necessary spotting and minute retouching can be done at once by means of water colors or crayons.

Another advantage of this method over the roller-press system is that it eliminates the danger of the gelatine sticking to the transfer paper and injuring its delicate surface when the separation is effected. Sticking, in fact, occurs usually in the white or unpigmented parts of the image under the strong pressure of the rollers, but by the method here described it is not necessary to apply pressure on these parts.

This article does not claim to indicate any

definite procedure. Other workers may improve a good deal upon the means I have adopted; but I confidently recommend them for a trial, feeling sure that every amateur with an artistic and independent turn of mind will derive great pleasure in feeling that he has absolute control over a process that, with the roller-press, possessed something that escaped domination.—J. H. Coalsworth in *Amateur Photographer*.

Soaping Bromoil Prints

Now that outdoor work is being reduced to a minimum owing to the short days and the restrictions on photography by the authorities, many workers are taking up artificial light processes, of which one of the most interesting is bromoil. This is not used by many amateurs because of the difficulty they have experienced in getting prints to ink up satisfactorily. Many are disgusted because the print refuses to take the ink.

Bromoil prints, I find, may be produced with ease and certainty. I have experimented with various kinds of bromide papers and with various developers, with plain and with acid fixing baths, and find, contrary to the instructions in books, that the bromoil print is not affected by any of these if the directions which follow are carefully carried out.

First, a bromide print correctly exposed—that is, so that it will develop fully and will not over-develop if left in for a considerable time—is taken and placed in water at a temperature of seventy degrees Fahrenheit and left there for ten minutes. It is then bleached in “Williams’ Bleacher” at the same temperature. The action takes place very quickly. The print is left in for two minutes, and then washed in two or three changes of water at seventy degrees Fahrenheit until all color is removed. Next it is transferred to a dish of water at seventy degrees Fahrenheit, a bar of ordinary Primrose household soap is rubbed on the hands so as to get a good lather, and this is then rubbed well onto the surface of the print while it is soaking in the water at seventy degrees Fahrenheit. A final wash is given at the same temperature, and the print may be placed on the base for pigmenting. It is surface dried, and will ink up readily, no matter what developer has been used.

This method has never failed me, provided

the original bromide has correct exposure. The whole secret of the process depends on the condition of the gelatine of the bromide print for absorbing the requisite amount of ink; and the soaping of the print seems to give just the necessary attraction to the gelatine for the ink, so that no further trouble is experienced. If the print is an old one, it is necessary to give a preliminary soaking for one hour at sixty-five degrees Fahrenheit before bleaching.

Apparently, the ready absorption of the ink is due to the small quantity of alkali contained in the soap, which leaves the gelatine with its surface in right condition to take the greasy ink. Prints so treated can be inked in a very short time.—“Experimenta” in *Photography*.

Photography of Coins

Not long ago, having to illustrate with lantern slides a short lecture on the excavations at our local Roman city, Magna Castra, I wished to include some photographs of coins dug up there.

I knew that old coins of varying color or stain in different parts do not of themselves photograph successfully, and that plaster casts are always used in professional work; but I saw an account in some foreign or American photographic paper that it was easier to make an impress of the coin on damp cardboard under pressure, in the same way as a stereotyper makes a paper mould from his type, and from that to make a plaster cast.

I have long been much interested in the fact that an incised carving appears as if it were in relief if lighted to give that illusion; that is, if photographed upside down, and the print shown right way up, and I surmised that the plaster cast from the mould could be omitted and the mould itself photographed, the result appearing exactly as the raised coin.

This surmise proved to be correct. I should remark that there is not the slightest advantage in “tinting” a cast or mould to be photographed. The negative need not be dense, and as coins are shown without a background, the negative can be printed to any desired depth.

The coins must be washed with soap and a nail brush, and very hot water, and very slightly greased with vaseline. Best thick

"ivory visiting cards" are soaked in water over night. Two pieces of thick felt are cut a little larger than the cards, and on a piece of felt a wet card is laid. Two or more coins are put on this, then another wet card on them, and then a piece of felt again. The whole is placed in a screw letter-copying press or between two pieces of board in a vise and pressure gradually applied. They are left under the heavy pressure for ten minutes or so. The moulds can then be taken apart and pinned to a board to dry. When dry, the cards can be cut, the obverse and reverse of each coin brought together, cemented on another card, and a negative taken. The moulds should be upside down, and lighted from the side. When the negative is dry, all except the coin must be blocked out with opaque black. Prints or lantern slides can then be taken.

I made one curious discovery in doing this work. It is that the eye is so accustomed to seeing a coin with raised letters and head, that it absolutely refuses to see a photograph of a mould of it as a hollow, however it is lighted.

A still shorter cut can be taken if desired, and I found it successful. A lantern plate can be put in the camera and the mould photographed direct on it without intervention of a negative. In this case it ought to show us a raised coin, and should be taken right way up. I prefer, however, to take a negative and print from it.—Alfred Watkins in *Photography*.

Uneven Illumination

One of the difficulties about using very wide angle lenses is that the lighting falls off very greatly towards the edges of the plate, and various devices have been introduced at different times to remedy this. In Sutton's panoramic water lens a "butterfly stop" was used, an arrangement by which the opening in the lens looked as large when viewed at an angle as it did when seen directly. In the Goerz Hypergon a star-shaped disc was pivoted so that it could be rotated during exposure, cutting off the central rays while allowing the marginal ones to act. Dr. Miethe suggested the use of a plano-convex lens of obscured glass cemented to a plano-concave one of plain glass, the result being like a piece of plain flat glass, but more opaque in the center than at the edges. A simple arrangement within reach of any one

who has much use for a very wide angle lens is to turn the camera towards an even white surface, such as a sheet of card, and expose a plate with the lens. On development it will be much thinner at the edges than at the center in consequence of the uneven illumination. A transparency made by contact from this will be denser at the edges than at the center. Two or three of different degrees of density may be made from the same negative. Such a transparency put into the printing frame before inserting the negative that is to be printed will serve to counteract its thin edges. If the original negative is fully exposed, so that its edges are only thin, not under-exposed, this will prove a complete cure.—*Photography*.

The Inventor of Kinematography

In the issue of our contemporary, the *Bioscope*, dated December thirtieth, is included a special eight-page supplement devoted to the early history and invention of kinematography. The article and quotations are authoritative and conclusive, and demonstrate the claims of Mr. W. Friese-Green as the sole inventor of motion-picture photography as we know it today. As the editor of our contemporary points out, had Friese-Green taken the same trouble in the renewal of his patents, the specifications of which are reproduced in the article, as he did with the scientific side of the business, he would today be drawing very large sums indeed from the thousands using these patents. As it is, the inventor sees around him a vast industry, the sequel to his genius, but having spent his all for the good of others, is now in a position of actual want and has a wife and two boys entirely dependent upon him. In view of the pleasure and entertainment that are given to millions every day as a result of Friese-Green's researches, both the public and the kinematograph trade should see to it that matters are put right. A Friese-Green fund has, therefore, been opened at the L. and S. W. Bank, Frith Street Branch, and contributions can be sent to the editor of the *Bioscope*, 85 Shaftesbury Avenue, London, W. Our readers should also ask for a copy of the issue referred to above. It makes interesting and instructive reading.—*Amateur Photography*.

NOTE: Seeing what the "movies" are to America, this should concern us also. [H. D'A. P.]

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Those Silvery-Grey Bromides

One method of producing very pleasing effects along this line hinges on the slow development of the enlargement by alternating a regular developing solution that has been diluted, and a soaking in plain water. It takes time but for certain subject the results are well worth the trouble. The developer should be diluted to one-half or less the strength at which it is ordinarily employed, and bromide added in proportion to the total bulk. Another tray should contain water only. After exposing the print, soak in the latter for about ten seconds, then transfer to the dilute developer for a like period, removed and drained a little and then into the water again, alternating the two until the development is completed. Modifications of the method suggest themselves as one gains a little proficiency and confidence. By having at hand a little full strength developer and a swab of cotton one can build up some parts in advance of others, and in that way give emphasis that is lacking in the straight print. One example of such work that came to our attention was a landscape that apparently was treated in broad masses quite charming for that particular subject, while the negative was such that a straight enlargement was most distracting on account of the abundance of fine detail scattered all over the print.

Making Color Filters

A New York correspondent asks as to the relative value of gelatine and collodion as a medium for carrying the dye, he wishing to coat glass with a vehicle containing the color. We can hardly do better than to quote from a little booklet by Professor Wallace, now with the Cramer Laboratories, some fifteen years ago. He said in a note at the end: Since writing the above the author has been led to the conclusion that although the collodion methods serve very well for the manufacture of light filters

which are not required to retain their permanency through a number of years, yet the use of gelatine as a coating upon the glass is much to be preferred, as offering results which are to the best of his observations strictly permanent. After the lapse of a few years the collodion film is apt to show irregular opalescence, like ground glass, which interferes greatly with its working; in fact, it will, as it increases, render the screen entirely useless. Under his continued observation for a period of about eight or ten years, this defect has not shown itself with gelatine, therefore, the remedy is obvious.

Developing Enlargements

A very successful professional enlarger, talking about his method of working, laid it down as his settled conviction that correct exposure was the main thing. Trying to force up, by longer development, an under exposed print was sure to result in harshness, while curtailing development in order to avoid too dark a print from an over-exposed sheet of paper simply gave a flat result. Occasionally one could make use of these facts to secure more contrast from a flat negative or more softness from a negative inclined to be hard, but with average negatives it was most important that correct exposure be given. Furthermore, when it comes to sepia toning, only the correctly exposed print responds fully to the treatment given. He agrees with Alfred Watkins in the matter of factorial developing which he employs in his work. He says that the factor once found for the particular developer used does not change with different grades or brands of paper. The factor for his own developer is four, which is, as in the case of nearly all, about one-third the factor of the same developer when used for plates. His practice is to throw his weight on to his right foot and start to count as the developer is flowed over the paper. At the first appearance of the image his weight

is shifted to the left foot and a new series of counts is started, changing the weight and starting a new series of counts twice thereafter, pouring off the developer as the fourth series is completed with his weight on the left foot for the second time. Of course, the number counted between the pouring on of the developer and the first appearance of the image establishes the number of counts for each of the three following series. As his exposures are nearly all correct, his "first appearance" time is always about the same number of counts, and, therefore, the difficulty judging when development is complete becomes simply a matter of counting off the time required for the "first appearance," and then repeating three times.

Stains Caused In Drying

A correspondent in Oregon wants to know how these can be removed. The truth of the matter is, we doubt very much if they can be effaced and have so stated before. However, he might try a formula recently published in one of the English journals. This consists of thoroughly bleaching the negative in a solution made up as follows:

Bichromate of potassium.....	45 grains
Sulphuric acid	1 drachm
Carbonate of sodium.....	240 grains
Water	5 ounces

The negative should be thoroughly bleached in this solution, thoroughly washed and then redeveloped in any clean-working developer. Perhaps, the writer suggests, the developer originally used is the best to employ. For the benefit of other readers, we might explain that these stains or markings are really neither of these things, but a more or less different degree of density with a more or less clear line of demarkation showing where the drying of the negative was accelerated or slowed up during the process. The same form of stains is produced by spilling water on a negative and then allowing it to dry without wetting the entire surface to an equal extent.

Introducing a Novelty

There is a photographer in your town no doubt, but in a certain other town there is a plain amateur who believes in producing something his fellow townsmen want without waiting for the Eastman Company to suggest to them that they pay him a visit. Seeing a quilt made up of those "Flags of All Nations," that are given away with some

cigarettes, he conceived the idea of furnishing a series of landscapes and local views, printed on cloth by the simple blue print process, for a given price. The first two or three sets were given away where he thought they would be made up into something attractive and the finished article shown, and the desire of the average feminine worker to show something pleasing when her own production did the rest. So great has become the demand that our friend is thinking seriously of putting in some sort of a machine that will sensitize the cloth and print it directly from a roll. One of his lady customers has purchased over a dozen sets, making up charming blue and gold bed covers to be sent to friends who have moved away from the town and who will be delighted with the suggestions of their former home.

Handling Over-Exposure

A recent visitor complained that, trying to counteract the effect of accidental over-exposure in developing a series of negatives, the plates seemed to work differently, not as they did a number of years ago. Enquiring into the matter, we found that this worker had, a few years ago, had uniform success in handling over-exposed plates by the simple expedient of adding a generous amount of bromide to his hydroquinone developer. Just recently, the same procedure with a metol-pyro developer seemed to fail entirely. The whole trouble was due to the fact that bromide as a restrainer has value only when used with a low factor developer, one in which the high lights come out first and well in advance of the rest of the tones making up the image. Even with such a developer, if development is continued beyond the time for a correctly exposed plate, the bromide added will have no advantage, as the final tones to come up will find time to make their appearance, and while the negative will be more dense in range of tones, its flatness will be just the same as if developed for a shorter time in a solution containing no bromide. With a high factor developer, metol, weak pyro, or a combination of the two, the high lights and middle tones come up in such rapid succession that before sufficient density is secured in the first, detail in the other parts grows to such an extent that the characteristic flatness of over-exposure results.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New Members

- 4172—J. C. Flint, 5506 Market St., Oakland, Cal.
3¼x5½ and 4x5, various papers, of general views, and marine scenes; for the same. Class 1.
- 4173—Eugene B. Lane, 285 School St., Berlin, N. H.
Class 2.
- 4174—Aug. Gaarz, 301 Arbor Vitae St., Cleburne, Texas.
5x7 and smaller, developing papers, of general views and copies of paintings; for most anything; prefer nude and semi-nude figure studies. Class 1.
- 4175—John C. Stuessi, Jr., General Delivery, South Milwaukee, Wis.
I would like to hear from every member of the I. P. A., especially those interested in genre, birds, animals and marines, or, in fact, any good picture that has a story to tell. Everybody write. Class 1.
- 4176—Mrs. Office McDonald, R. F. D., Green Ridge, Mo.
Class 2.
- 4177—Marvin Roark, Ellensburg, Wash.
1½x2½ to 11x14, developing papers, of waterfalls, mountain scenery, portraits, and snow scenes; for mountains, waterfalls, and natural scenery. Class 1.
- 4178—Dr. J. A. Dodson, Maysville, Ky.
3¼x5½, developing paper, of outdoor and river scenes; for miscellaneous views of general interest. Class 1.
- 4179—I. S. Halpern, 765 Jennings St., Bronx, New York.
V. P. Kodak, 2½x4¼, 3¼x5½, 4x5 and 5x7, various kinds, of landscapes, monuments and architectural New York views; for landscapes with clouds, and architectural. Class 1.
- 4180—Chas. Rozell, Orange, Cal.
Any size, developing paper, of portraits; for the same. Class 1.
- 4181—Charles Weems, 102 Garfield Ave., Valparaiso, Ind.
3¼x4¾, developing papers, of botanical views; for the same. Desire only lantern slides or prints of botanical nature. Class 1.
- 4182—Wm. R. Bowlin, 10054 Wood St., Chicago, Ill.
5x7 and 6½x8½, of commerce, art and history of Chicago, also agricultural and nature studies; for historical subjects, also commerce and industries of world. Lantern slides only. Class 1.
- 4183—H. J. Nason, 3021 North 8th St., Tacoma, Wash.
Class 2.
- 4184—B. F. Loomis, Anderson, Cal.
Class 3.

RENEWALS

- 777—Herbert R. Gregg, Oroville, Wash.
Class 2.
- 2009X—Charles F. Meacham, Bellows Falls, Vt.
Post cards only. Class 1.
- 2025X—V. A. Wood, Oakdene Ave., R. F. D., Hackensack, N. J.
4x5 or enlargements, developing papers, of scenic and genre; for all subjects, barring buildings or street scenes of no particular or general interest. Desire to exchange lantern slides, prints or post cards of genre subjects, especially children. Class 1.
- 2776X—L. A. Sneary, 2822 Espy Ave., Pittsburgh, Pa.

- Lantern slides of historical points in and about Pittsburg, Pa., nature studies, flowers, etc.; for whatever can be agreed upon after correspondence. Class 1.
- 2885—George Macaulay, 167 Allen St., New Bedford, Mass.
3¼x4¼, developing paper or post cards, of marines and miscellaneous views, also a few speed views; for views of interest, especially mountain views. Good work only. Class 1.
- 3184—J. Fred Fehr, 149 Brainerd St., Naperville, Ill.
Lantern slides. Class 1.
- 3349—L. O. Surles, P. O. Box 434, Cuthbert, Ga.
Formerly at 231 East Pine St., Atlanta, Ga.
3¼x5½ and 4x5, various papers, of Southern dark and characteristic pictures, also pretty wooded and stream landscapes; for anything of general interest. Class 1.
- 3830—Dr. Addison O'Neill, Daytona, Fla.
Class 1.
- 3848—William Charles, Box 33, Basom, N. Y.
2¼x3¼ to 5x7 and post cards, developing papers, of views, portraits, and flashlights in the mines; for athletic, swimming and camping views. Class 1.
- 3852—J. W. Jeffers, McClure Bldg., Frankfort, Ky.
Vest pocket, 3¼x5½, 4x5 and 5x7, developing papers, of general views, landscapes, historical places in New York, Lookout Mountain, Cuba, also local and a few nudes; for foreign and anything that is good; only good work accepted; post cards and prints with white borders. Class 1.
- 3942—A. Warrington, 124 Dock St., Philadelphia, Pa.
2¼x3¼ and 3¼x5½, developing papers, of waterfalls, landscapes, historical, marine and genre; for the same. Class 1.
- 4001—Fred Weidmann, 1692 2nd Ave., New York, N. Y.
3¼x5½ and 4x5, developing papers, of interesting scenes in and around New York; for same class subjects. Only first-class work sent out and wanted in return. Photo correspondence wanted with each exchange; cards or prints. Class 1.
- 4022—V. E. Fowler, P. O. Box 919, Portsmouth, Ohio.
4x6, developing paper, of figure studies, draped and nude; for the same. Class 1.
- 4036—Hubert R. Wall, Box 171, Sonora, Tuolumne County, Cal.
3¼x5½ and 5x7, various papers, of local views, mountain scenery, rivers, lakes, Yosemite Valley views, home portraits, and views of general interest, also post cards; for views of the following: Montreal, P. Q.; St. John, N. B.; Quebec, P. Q.; Toronto, Ont.; Niagara Falls, Ont. and N. Y.; Buffalo, N. Y.; Detroit, Mich.; Chicago, Ill.; Los Angeles, Cal.; Pasadena, Cal.; Long Beach, Cal.; San Francisco, Cal.; also 3¼x5½ views of San Francisco Fair, and life studies in the nude. Class 1.
- 4038—J. R. Ainsworth, Salem, S. D.
Lantern slides, of interesting views; for the same. Class 1.
- 4043—Carl H. Helmbrecht, R. F. D. No. 2, Box 70, Turtle Lake, N. D.
Class 2.
- 4049—Robert S. Blatchford, Reserve, N. M.
Class 2.
- 4104X—George Plass, R. F. D. No. 7, care Chas. Bloebaum, Vincennes, Ind.
Post cards. Class 2.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

The Camera Club of New York City

The Camera Club of New York City is having a very active and successful season. Every Tuesday evening, which is the regular club night, entertainments have been given. In addition to photographic and musical offerings, the Club has had lectures by the following eminent artists: Henry W. Ranger, Elliot Dangerfield, J. William Fosdick and George Bogart. Exhibitions have been going on every month, and up to the present time our list includes the honored names of Pirie MacDonald, Dudley Hoyt, Henry Wall, and pictures by our fellow member, Mr. Edward Steichen. Later in the season we are to have Interchange Exhibits, and we also have advertised a competition for gold prizes of "Regular" and "Fake" pictures, which is only open for our members. Photographers, either professional or amateurs, visiting New York City, will be most cordially welcomed at the Camera Club.

The Montreal Exhibition

The Montreal Amateur Athletic Association Camera Club of Montreal, Quebec, announces its Tenth Annual Exhibition, to be held April tenth to fifteenth, inclusive. The Exhibition will be divided into five classes: figure studies, landscapes, waterscapes, and genre, open to all amateurs, and a special class open only to members of the Association. Bronze medals will be awarded in the first four and a bronze plaque in the latter class. No fee is charged for entries, and while pictures must be mounted, framing is optional. Each picture must bear on the back its title, the exhibitor's name and address and club, if any, to which he belongs. Exhibits must be delivered, carriage paid, to E. W. de Cordova, Secretary, 250 Peel Street, Montreal, on or before the twentieth of March. Exhibits from outside of Canada should be sent by post, thus avoiding customs formality in receiving and returning. A letter advising of the sending, the number of pictures, their

titles and classes, should be mailed under separate cover to the Secretary; and, although not demanded, entry forms for this purpose will be supplied upon request.

The Guild of Allied Arts

At the annual meeting of the Guild of Allied Arts and Crafts in Buffalo, New York, there was held an exhibition of lithographs and woodcuts that attracted a great deal of attention from the artists and art-loving residents of that city. The Guild has under consideration the purchase of a suitable site on which to erect a five hundred thousand dollar structure, to be used as headquarters together with suitable rooms for the Drama League, the Chromatic Club, the Artists' Society, Society of Architects, and other kindred organizations. No doubt the local camera organizations will be represented, as photography will have a prominent part in the Guild.

During the session the annual election was held, resulting in the election of, among others, Spencer Kellogg, Jr., as Second Vice-President, and W. H. Porterfield as Treasurer.

It hardly need be mentioned that both are quite prominent in the local as well as national photographic circles; in fact, both gentlemen are no doubt well known to a large proportion of our readers who will appreciate the honor conferred. Mr. Kellogg is taking a most active part in the carrying out of the plan of a suitable home for the Guild, and he has secured the co-operation of a number of wealthy Buffalo citizens therein.

Illinois College of Photography

While fighting a fire at his home a few weeks ago, Professor C. W. Fisher, of the College of Photoengraving, received some very severe burns. These resulted from an explosion caused by the accumulation of gas in one of the rooms. He was taken to the hospital and remained there for over a week.

OUR BOOK SHELVES

"Photograms of the Year 1916"

This, the twenty-first yearly issue of this handsome annual, which has just reached our desk, sustains its reputation by the large number of handsome reproductions that it contains. There are about one hundred of these illustrations, nearly all of them the full size of the large pages, and all are printed in handsome style on a cream-tinted paper that adds greatly to their photographic quality, not to mention a number that are "tipped" in on regular mounting paper in photographic style. Not a few of our American workers are represented, and added interest is given the volume by a discussion of the merits of a large number of the pictures shown.

This annual is so well known that no great amount of description is necessary. It is published by Hazell, Watson & Viney, Limited, 52 Long Acre, London, W. C., England. The price is two shillings sixpence net, and is obtainable from all book stores, news agents and photographic dealers throughout the world. Both Tennant & Ward, 103 Park Avenue, New York City, and Hirsch & Kaiser, 218 Post Street, San Francisco, can supply copies at one dollar and twenty-five cents, postpaid.

"British Journal Almanac—1916"

This ever-welcome photographic compendium is again at hand, just a little late, but all the more appreciated as it does reach our desk. It is published by Henry Greenwood & Company, Limited, 24 Wellington Street, Strand, London, and obtainable in this country through the trade agents, George Murphy, Incorporated, 59 East Ninth Street, New York. Practically every dealer carries a supply, and the well-known local firm of Hirsch & Kaiser, 218 Post Street, stock a large number each year. The paper covered edition costs fifty cents, the cloth covered edition one dollar, postage extra. As both weigh, wrapped, about three pounds, the cost of postage according to zone can

be calculated by the one ordering from either of the two firms mentioned.

An "All-Australian" Number

The January issue of *The Australasian Photo-Review*, the second yearly "All-Australasian" number, is a monument to both the skill and ability of the photographic workers and the enthusiasm and enterprise of the publishers in this progressive country across the water. The issue contains eight full-page illustrations in pleasing tints, and about five times as many regular illustrations. The articles, particularly interesting, cover a wide field. Portraiture in Direct Sunlight, Tank Development for Plates and Films, Some Notes on Composition for Photographers, Home-Made Accessories, Photographic Book Plates, and like titles giving some idea of the scope. These articles, like the picture, are all the work of Australasia contributors who should be extremely flattered at the result the publishers of the magazine has achieved in producing this particular issue. The magazine is edited by the well-known Walter Burke, F. R. P. S., and published by Kodak (Australasia) Limited, 379 George Street, Sydney, Australia.

"How To Make Prints In Colors"

This is No. 4 of the Practical Photographic Series so well and favorably known. Its sixty-six pages are devoted to many different methods of making prints in colors, beginning with the ordinary blueprint and following with the method used for obtaining sepia and other colors on home-made papers as well as those in general use, through carbon printing, autochrome and ending with the new Hess-Ives and the Kunz processes. The books are obtainable in paper and handsome cloth covers at the nominal price of twenty-five and fifty cents, respectively. Published by the American Photographic Publishing Company, Boston, Massachusetts.

NOTES AND COMMENT

**A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest**

Reported by William Wolff

News of the death of Mr. Saul, who was formerly on the Coast for the Eastman Kodak Company, came as a shock to us all.

Ernest Forsmark, of Turlock, spent a few days in San Francisco recently.

L. M. Powell, of Hanford, was in Kansas City on business during January.

Cousins & Howland, of Hanford, now carry the Kodak line.

His friends would like to know what Otto Ayers, with Buker Colson, Fresno, likes better than the drug business.

A. L. Sunderland, of Webster Brothers, Fresno, was recently elected secretary of the Peach Association.

The genial Bertrand, of the Cramer Dry Plate Company, is in San Francisco at the present time.

H. P. Graflex Willis has returned from his southern trip.

Now that the rain has ceased, we should all get busy.

Photographers' Association of America

The meeting of the Executive Committee of the Association was held at Hotel Statler, Cleveland, Ohio, January tenth to thirteenth, inclusive. Taking up the plans for the 1916 convention, July twenty-fourth to twenty-ninth, inclusive, were decided to be the most suitable dates, and Wigmore's Coliseum, with a total floor space of approximately sixty-five thousand square feet, was selected for the meetings and exhibits of the convention. The Hotel Statler was selected as headquarters.

The keynote of the convention will be "business-getting and business-holding ideas," and around this the entire program is planned. The art side of photography will not be neglected, however, for competent lecturers and demonstrators will give their best efforts towards instructing those who desire to become proficient in artistic photography. Some of the demonstrations

will cover pictorial photography, and others will be by photographers who have made a success of the business of producing what is commonly known as "bread and butter" photographs and all members will be privileged to ask questions and make suggestions.

A special effort will be made this year to make the picture exhibit unusually instructive. Up to twenty pictures will be selected for salon honors. All the exhibitors who receive salon honors will be given a certificate of merit as last year. The pictures will be divided into four classes: Interpretative, general portraiture, commercial photographs and the complimentary. The commercial photographers will be represented on the program by at least two numbers, and their pictures will be hung separately, and at least one number of the program will be devoted to the women of the Federation. Unusual entertainment features will be possible this year; a trip to Cedar Point for one day will be one of the biggest hits of the convention. Another feature will be an informal reception and dance in the large ball room of the Statler Hotel on Monday evening, and other social features will keep the week full of pleasure.

The Stevens-Ayres Bill

On January twenty-first, under the title, "To protect the public against dishonest advertising and false pretenses in merchandising," Representative Dan V. Stephens, of Nebraska, today reintroduced in the House of Representatives the original Stevens-Ayres bill with a number of important amendments designed to meet the views of many friends of the measure. The new bill specifically permits discounts for cash and for quantity and for allowances and rates covering costs of transportation, and a final, new paragraph exempts sales to libraries and other public institutions. There are also drastic provisions against the use of the privileges of the bill in connection with any monopolized

NOTES AND COMMENT

product or one concerning which there is any combination between manufacturers.

The latest tally shows two hundred and nine members—nine less than a majority—of the House, in favor of this legislation.

Examples of Correct Exposure

We have recently had the pleasure of inspecting some very fine bromide enlargements from negatives covering a wide variety of subjects, all the original exposures being timed with the new Harvey Exposure Meter. Architectural subjects, groups in the shade, aeroplanes, twilight effects and night views of city streets were included in the collection. The enlargements showed conclusively that the negatives from which they were made were of the highest quality, despite the fact that they were developed by an amateur, the enlargements, however, being the production of a professional, turned out in the regular course of such work through his shop. We have mentioned this for the reason that many amateurs find it not difficult to produce good contact prints from their small negatives by taking advantage of the various grades of paper obtainable, but when the same negatives, some thin and ghostly and others dense and hard, are sent to an enlarging house, or even when they try to enlarge from them themselves, the results are disappointing. Proper timing of the original exposures assures good negatives, and good negatives assure good enlargements. Readers appreciating this rather obvious fact and feeling the need of a reliable exposure guide should investigate the merits of the meter offered by G. L. Harvey, 105 South Dearborn Street, Chicago, by sending for descriptive circular or sending the dollar that the meter costs.

A Substitute For Metol Promised

Doctor Charles J. Thatcher, a graduate of the University of Leipsic, but now a chemical expert in New York, has made an extensive study of the composition and properties of various photographic developers, with the result that a patent has been taken out on a new developer called Kathol. This is claimed to have substantially the same composition as metol, and to answer perfectly as a substitute therefor. It is believed that it can be successfully manufactured on a commercial basis, and if this and the claims made for the new developer prove to be true, the product will certainly be made most welcome

by the photographers of the country who are now deploring the serious shortage of metol, due to the disturbance abroad.

The Hylo Mazda Lamps

The new dark-room lamp known as the Safe Ruby Bulb Hylo Mazda is achieving great popularity with both amateur and professional photographers. It embodies all the advantages of the well-known Mazda, while giving the user two lamps in one, as the larger or full filament can be used for bromide papers, ordinary plates and lantern slides, while the lower candlepower filament is suitable for the safe handling of the more sensitive plates and films. These lamps differ from the ordinary ruby lamps in being not only without a tip, but the color of the bulb is such that the lamps have the non-actinic quality of the best ruby glass manufactured especially for photographic purposes.

The well-known local firm of Hirsch & Kaiser, 218 Post Street, San Francisco, in addition to supplying their retail customers, have been appointed Pacific Coast agents, and will supply the trade in this territory.

Some Camera Bargains

In our advertising section this month will be found an announcement of the well-known Carmichael's Camera and Lens Exchange of 111 Summer Street, Boston, and those interested in high grade, second-hand outfits should give it their attention. "Carmichael's" is well and favorably known to all photographers in Boston and the surrounding country as the home of rapidly moving bargains, and this enviable reputation makes for most satisfactory dealings both for the man with a desirable lens or outfit to exchange or the individual who wishes to purchase a satisfactory equipment at a bargain price.

For Professional Enlarging

The new Ansco Enlarging Outfit is the result of the interest shown in the outfit installed at the last National Convention for the purpose of demonstrating enlarging Cyko. The interest shown was conclusive that an equipment along the same lines would meet with approval, and we are glad to announce that this equipment is now available through regular trade channels.

Briefly, it consists of an 8x10 enlarging camera having an extension base equipped with an easel or copying board, the whole resting on a supporting table occupying a

floor space of thirty-one by fifty-seven inches. The adjustment of negative, lens and easel is achieved by a most simple and efficient cable control that enables the worker to make adjustment easily and quickly without shifting his position from the side of the outfit. The new and efficient M-shaped Cooper Hewitt tube is employed with this outfit, the quality of the light being such that roundness and atmosphere are brought out, while any coarseness or retouching is not accentuated. Space does not permit of a full cataloguing of the many advantages of this enlarging outfit, but a circular giving particulars can be obtained from the Ansco Company, its various branches, or dealers carrying its line.

Southern School of Photography

A recent letter from "Daddy" Lively, of the Southern School of Photography at McMinnville, Tennessee, advises that the school for this year opened with a nice class, and indications point to an exceptionally good attendance to follow. Those desirous of acquiring new ideas and new methods, to the end that they can produce better photographs and make more money, should write the school for catalogue and information concerning the rapid method of instruction being followed.

American Bromine and Bromides

From *Commercial Reports* we learn that the bromine wells in and about Pomeroy, Ohio and Mason City, West Virginia have again been put into commission after remaining in a state of idleness for a number of years. The present monthly production will amount to five or six tons, enough to notably lessen the present shortage and permit American manufacturers of photographic chemicals to furnish all needed of the forms of bromide used in photography. The American output of bromide has largely been concentrated in Michigan and Pennsylvania, in connection with the salt industry, the maximum output being reached some ten years ago. The average output at that time was about six hundred tons, since which it has fallen to something less than half that amount.

The Ernemann Kino Apparatus

The Meyer Camera and Instrument Company, Incorporated, 31-33 East Twenty-seventh Street, New York City, advise that they have on hand a number of the Ernemann Kino motion picture cameras that they

will be glad to dispose of at a very much reduced price. These excellent instruments are equipped with developing frame, film cementing block, film-reel holder, film-winding apparatus and f-3.5 anastigmat lenses. These cameras are of the usual Ernemann high quality and are used quite extensively abroad for scientific cinematographic lectures in universities and the like. The negatives are somewhat smaller than those made on standard moving picture film, as the film used is narrower and accommodates twenty-eight pictures to the foot. This film the Meyer Company can supply at four cents per foot. Any one interested in this type of motion picture camera and projecting outfit should communicate with the firm mentioned.

Illinois College of Photography

The College basketball team journeyed to St. Elmo, Illinois, last month, and in a game with one of the teams of that city, won by a score of twenty to seventeen.

Walter P. Gould, a 1915 graduate of the College of Photography, is now employed in the Reeves Studio at Anderson, Indiana, one of the best in the country. The owner, Mr. Reeves, is an ex-president of the Photographers' Association of America.

The Second Annual School of Professional Photography, the third week in January at the College, was conducted by expert demonstrators from the Ansco and Hammer Companies. Some demonstrations given with a Cooper Hewitt enlarging lamp were very interesting and instructive.

Professor C. W. Dishinger, of the Printing and "Fishing" Department, spent the holidays in Mobile, Alabama, where he enjoyed himself with his favorite pastimes, hunting and fishing. While himself and party were cruising along the coast, the boat encountered a gale which almost caused it to "turn turtle." Though somewhat frightened at the time, the professor realizes that it is all a part of the game.

On February third, President Woodrow Wilson and party passed through Effingham on the Pennsylvania Railroad on the return from his Middle Western trip, en route to Washington, D. C. He would make no speech, but came out on the platform of the car and smiled upon the thousands who were at the station. A battery of cameras and motion picture machines was in evidence, and a great many snapshots were taken.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA.

Enlarging thin and weak amateur negatives

Thin negatives worthy of being enlarged because full of human interest have heretofore found their way to the scrapheap. No enlarging paper on the market was capable of correcting the technical deficiency of such negatives, until the advent of

Contrast Enlarging Cyko

This grade of Enlarging Cyko is to enlargements as Contrast (Blue Label) Cyko is to contact prints—the saver of negatives otherwise unprintable.

AnSCO Company
Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. ¶**Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. ¶**New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. ¶**Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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A HOME PORTRAIT
By C. P. RICE



CAMERA





CRAFT

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The Flashlight for Home Portraiture

By C. P. Rice



With Illustrations by the Author

When asked by the editor to write an article on flashlight work, the only difficulty I anticipated was in condensing my ideas into readable form. When Mr. Nelson's excellent article appeared in the December *CAMERA CRAFT*, however, I found that in many instances our ideas were identical, and that he had covered the subject pretty thoroughly. Read his article and you have much that I had intended to say, and I give him credit for expressing it much more clearly than I could have done.

It was my good fortune to be associated with F. W. Guerin and Charles H. Nichols some years ago; and seeing them work and seeing the results they produced, converted me into an enthusiast on the subject of flashlight, and I have been using it for something like fifteen years, applying it to home portraiture more or less during that time.

I have made some excellent home portraits with the old style open machine, but the smoke produced was objectionable and I gave up the idea of using flash powder for such work. Later, the invention of the flashbag solved the smoke problem and I again took it up. I have been using an adaptation of the bag idea for about four years. During these years, home portraiture has become quite an item in my business, the work being done in connection with that of the studio. When making home sittings, I carefully avoid studio effects. If the patron prefers these last, I advise coming to the studio, where I have the proper equipment and can work to better advantage. Of course, if one is working independent of a studio, this need not be done. Studio effects can be produced anywhere quite as effectively with a flash as with any other method.

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The apparatus is quite an important factor, much more so than one would at first imagine. The bag should be large enough to contain the concussion without too much strain. A small bag is apt to confine the flash too much and produce unnecessary noise, and this last should be avoided as much as possible.

Personally, I do not care for the suit-case type of bag. To be sure, they present a good appearance, but they are apt to be too small and I consider efficiency before appearance. Besides, in using one, I would have to pack my outfit in three units instead of two. I prefer a canvas bag that will fold up and wrap in a bundle with the three tripods, reflector cloth, wiring, etc. The firing device, powder and other paraphernalia go in the case with the camera and holders. In this way I have but two parts to my outfit when packed, and when

set up, it is substantial enough to meet all requirements.

The manner of firing the powder is well worth considering. It might be said that the firing device is to the flashbag what the lens is to the camera. An inferior lens will yield good negatives under favorable conditions, but the operator is working under a handicap. Likewise, almost any method of ignition will suffice, at times; but it will be the cause of failures at others. What one wants is equipment that will be most efficient under trying circumstances. I have tried most of the devices



A SATISFACTORY HOME GROUP

that have been placed on the market during recent years: alcohol lamp, spark coil, concussion cap, etc., but have found electricity the most satisfactory. I have never found anything that would fire powder as quickly or quite as surely as the short-circuit fuse, although I have been using an electric sparker, one on the order of a spark coil, quite successfully.

One advantage of electrical ignition is that it permits the use of cord connection between the camera and bag instead of rubber tubing. With tubing,

THE FLASHLIGHT FOR HOME PORTRAITURE



GOOD QUALITY IS CHARACTERISTIC OF FLASHLIGHT WORK

the air pressure has to travel some distance, causing an interval between the pressure of the bulb and the exposure. If the shutter makes a noise or the subject gets any warning, closed eyes are apt to result. The use of tubing also necessitates a harder pressure of the bulb, and the operator is apt to unconsciously squeeze it so vigorously that the subject will detect the movement, know

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the flash is coming, and the desired expression is lost. With the majority of subjects, all this is not so important, but I have found others who would invariably close their eyes, despite my best efforts to photograph them by this method. With people of this sort, quick firing is most important; and, in making full figures and groups, where the light has farther to travel before reaching the subject, the same is true.

The only tubing about my outfit is that from the bulb to the shutter. Only a slight pressure is necessary and the flash responds almost instantly. Working in this way, there is no tubing on the floor to get kinked or stepped upon. I try to have my apparatus so that, after withdrawing the slide, I can concentrate my whole attention on the subject. This may not seem important, but experience teaches that it is. I have had numerous exposures "queered" by something going wrong with the tubing or some fitting, and such things have an exasperating way of occurring in the making of what would otherwise have been one's best exposures.

Another important factor is the powder used. It should possess uniform actinic power and speed as well as good keeping qualities. Some powders are good only when fresh, soon becoming caked and of such uncertain character that the operator cannot tell what will happen when he presses the bulb. After



THE SISTERS—A PLEASING HOME GROUP

THE FLASHLIGHT FOR HOME PORTRAITURE



MORE SATISFACTORY THAN THE USUAL STUDIO WORK

trying numerous brands, I have settled upon the use of Victor flash powder, a brand I find excellent.

Some writers speak of the "unnatural light of the studio" and point out that people are best known by their friends and relatives as seen "in the natural light of the homes." Theoretically, this contention is all right, but it does not stand the test of actual practice. Many of these "natural" lighting effects are pleasing as viewed on the living subject, but as they register themselves photographically, are quite the opposite. Examine any collection of portraits made in the homes and with the natural light and you will find, in many cases, that the strongest light strikes somewhere between the knees and waist of the subject, due to the location of the windows. This is natural, in so far that it is true to existing conditions in the average home, but in my opinion the natural part of it ends right there. The open light, as it comes from the sky, certainly gives a photographic image that is much more pleasing, and I claim that it is more natural. I can also contend that, despite the fact that such lightings differ from the so-called "natural lightings" of our living rooms, they do not offend; if, in fact, they are other than satisfactory and pleasing. Following the same line of thought, I contend that lightings produced in homes by means of a flash are not necessarily unnatural. They show people much as they appear under the gas or electric lights as usually placed in our living rooms.

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Occasionally one will encounter subjects who are afraid of the flash. As long as such a feeling persists, it is almost useless to waste material. It is necessary for the operator to dispel this dislike, and a little mental suggestion is often a great help. For example, if one can get a child to associate the noise of the flash with firecrackers or a Fourth of July celebration, that child is at once converted into a much more pliable subject.

Most writers admit that negatives made in home work are apt to require more or less doctoring, local reduction or intensification, or both. They are no doubt right in the case of daylight exposures; but, aside from the occasional bluing of a face or hand, very little is required in flash work if the right amount of powder is used and the plates are properly developed. I cannot truthfully

say that all of my flash exposures made in homes are perfect. I wish I could; but I do make better negatives on an average than under the skylight with the natural light.

Now, do not imagine that home portraiture with a flash is easy. It may look so on paper, but in practice it is far from being such. One taking up the work will constantly encounter difficulties that will tax his ingenuity and patience to the utmost. However, this is true of anything that is worth while; and, to the earnest worker, simply makes it all the more fascinating. Home portraiture has one particular feature



AN EASY POSE IS ALWAYS PLEASING

that appeals to me strongly, and that is that one is working in different surroundings at each sitting and has the best class of subjects to deal with. The accompanying illustrations are from negatives on the new Portrait Films, made with Victor Powder used in a Shoberg Bag.

In conclusion, I might add that the foregoing suggestions are based merely on opinions as formulated from my own experience. No doubt others will disagree with me on some points, and their opinion is worth as much as mine. The thing for one to do, however, is to work out a method for himself. The

PICTURES IN BRONZE

plan of procedure that will produce, for him, the best results with the fewest failures, is the one he should adopt.



THE BRIDE



HER PET



Pictures In Bronze

By Theodore E. Peiser



Pictures in bronze, if properly made, will give much pleasure, but they cannot be produced by careless manipulation. The process requires particular and painstaking care, otherwise the results will not be satisfactory. The formula for the compound is made as follows:

Water, distilled	(100 c.c.)	3½ ounces
Cane sugar	(2 gms.)	30 grains
Glucose	(5 gms.)	75 grains
Gum arabic, powdered.....	(5 gms.)	75 grains
Honey	(1 gm.)	15 grains

After the ingredients have all dissolved, ten cubic centimeters or one hundred and seventy minims of a saturated solution of bichromate of ammonia are added to the mixture. It is allowed to stand for some hours and then carefully filtered two or three times. With this solution the plates are coated. It is im-

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portant to obtain an entirely uniform layer, and dust or other impurities must be prevented from coming in contact with either the solution or the prepared plates.

It will be better to dry the plates near the fire; doing so perfectly will require from five to fifteen minutes, after which they may at once be exposed, in a printing frame and under a negative, to strong, diffused daylight. The time of exposure depends very much upon the amount of moisture in the air. In this respect they are somewhat like platinum prints. It is always a good plan to make a trial exposure, say, of ten minutes. It is better to expose slightly too long than too short.

Development is done with bronze powder; a tuft of cotton being charged with the powder and passed lightly over the surface of the plate. This manipulation, as well as the coating, may be effected in a not too strong artificial light or very weak daylight. As soon as the image has been fully developed, a second clean tuft of cotton is lightly brushed over the surface of the plate to remove the surplus bronze powder. This last should also somewhat burnish the picture and make the deepest shadows entirely free of the powder. Splendid effects may be obtained if various colored powders are used for different parts of the picture.

After the image has been completely developed, the film is coated with a two per cent collodion. Probably the originator of this formula intended to advise a collodion made up as follows:

Alcohol, absolute	1 ounce
Ether	1 ounce
Gun cotton	2 grains

To this should be added a very small amount of glycerine, just sufficient to make the collodion flexible. The plate should then be exposed to sunlight from the back or through the glass side.

After fifteen or twenty minutes, the proper duration of time depending upon how bright the light is, the plate is washed in running water until the yellow color has been removed and the water remains clear. It is then dried and the surface varnished with diluted copal varnish, or with colorless Japan varnish in case the support is a metal or ferrotype plate. In the case of glass plates, the coating should be one of dark brown or black asphaltum varnish, as this will give almost the same effect if the picture be looked at from the back or glass side.

While I have never tried them, these directions may be considered correct, as they are translated from Liesegang's Photo-Almanac (German) by M. F. Veress. They have been in my possession for a number of years. Another formula, more condensed, and one which some one might like to experiment with, follows. A ferrotype plate or a glass coated on the back with asphaltum varnish is coated with:

Water, distilled	30 parts
Gum arabic	2 parts
White sugar	1.1 parts

After printing, the plate is dusted over with a white powder or precipitated metallic silver, collodionized, washed and finally varnished.

Making a Duplex Printer

By Wilhelm Westman



With Illustrations by the Author

I believe I was one of the first, if not the first, to construct a printer having two light compartments and two printing surfaces. Mr. Clute will remember that when I was in San Francisco several years ago, I built such a printing box fitted with tungsten lights. Since then I have built one for Mr. Aune in Portland and later another and an improved one for his studio in Los Angeles. In



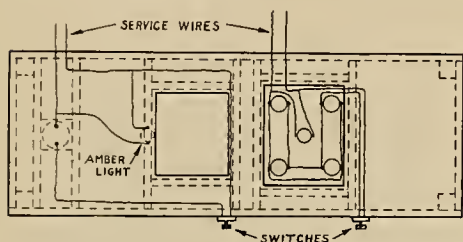
EXAMPLES OF MASK BORDER PRINTING

these last I employed the nitrogen Mazda C lamp for printing, reflecting its light through the smaller or printing opening, finding the 750-watt one to fill all requirements. I find it best to use a lamp of lower voltage than the service, using a 110-volt lamp on the 112 to 115-volt current. If one does this, care should be taken not to burn the 750-watt lamp too continuously, but turn it off whenever possible, particularly when using it for enlarging. I also used the printer as a table on which to rest my enlarging easel, but will explain this feature further on in this article. The 750-watt lamp prints Artura, using an average negative, in from five to ten seconds, and it prints Azo or Cyko in from two and one-half to five seconds. This I regard as about right. One does not enjoy

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standing first on one foot and then on the other while a print is being made. I like a little speed; in fact, am going to buy a Ford in the spring.

To construct the printer, take two eight-inch boards, five and one-half feet long, two of the same width, but only two feet long, and nail these together to form the four sides of an oblong box. In each corner fasten pieces of 2x2 of a suitable length to serve as legs, having in mind the height that would be preferred by the man using the printer. My own has legs about three feet long. This done, one has a table, without a top, two feet wide and five and one-half feet long, with legs making it about three feet high. If crowded for room, the printer can be made a foot shorter, but the extra length comes very handy when arranging masks. Then cut a piece of compressed fiber wall board, that comes about one-quarter inch thick, to cover the top, coming out flush with the outer



PLAN—SHOWING TOP



ELEVATION—FROM FRONT

edges of the board frame. I prefer this material to wood, as it makes possible a top that is all in one piece; but of course, if one can get a board two feet wide, it would be nicer. In this thin top cut an 11x14 opening, twenty-two inches from the end, and another, about 12x15, with its nearest edge about four inches from the side of the opening first cut, as shown in diagram A. Next, before the table top is fastened on, attach the socket, a porcelain Mogul wall socket of large size to accommodate the 750-watt Mazda C lamp, in position as shown in same sketch, also a socket for a small amber light, placing this last about half way between the Mogul socket and the edge of the printing opening. If amber lamps are not available, a clear, ten-watt Mazda enclosed in a bag of canary yellow tissue paper will serve every purpose. Lay the top squarely on the table and mark around inside the skeleton frame to get guide lines for the ends of the cleats. These last are cut from 1x2 stuff and should be so placed that they will strengthen the top without interfering with the openings or the lamp socket, as shown in dotted lines in the diagram.

Next proceed to extend and enclose the bottom of the frame to form the two light chambers, using the compressed fiber board to add eight and one-half inches to the bottom formed by the eight-inch board frame. This makes the box sixteen and one-half inches deep. Before putting on the bottom, place a partition of the same material between the two light openings; and, if another partition be placed just beyond the larger opening, the space so set off at the end can be equipped with drawers or a door and used for storing paper. There is also required a reflector made of a sheet of the compressed board. This should be of a size that will just slip in through the bottom and stand at an angle of about forty-five degrees, extending from the top of the middle partition to a point on

MAKING A DUPLEX PRINTER

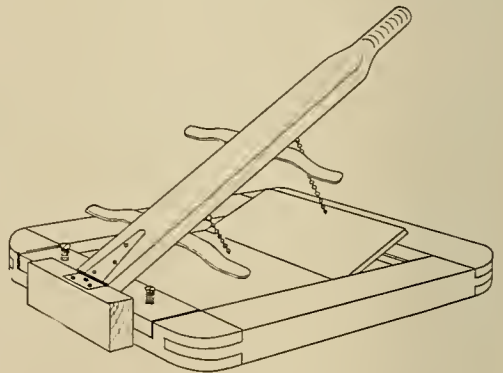


FOUR PORTRAITS WITH PRINTED BORDERS

the bottom of that light compartment below the smaller opening in the top. This reflector support should be left movable and its exact angle determined by placing a piece of mirror on it and trying its effect after the light has been connected up. If this mirror, after being used for this purpose, is kept at hand, it can be put in place to intensify the light when printing from a too dense negative.

These two light chambers should be lined with sheet asbestos, this material serving as a protection against fire, of which there is practically no danger, and also as a reflecting surface. The bottom, of the same material, is then placed in position and lined with asbestos, while a sheet of blotting paper should be placed on the inclined reflector to reflect an even light. Another small, amber-colored light should be placed directly under the center of the opening and both so wired that they burn continually, while the two switches on the outside of the frame make it handy to turn the large light or the group of four Mazdas off or on. The wiring one can do for himself according to the diagram herewith or an electrician can be employed. The smaller opening, the one above the reflecting surface, should be surrounded with cleats that just hold an old 11x14 printing frame snugly in place.

Take this frame and cut away the wood of one end down to the thickness of the cleats. Then cut a piece of hardwood to fit the place so made, boring a three-eighths inch hole through each end. Two wood screws pass through these holes and are screwed part way into the frame below, enough remaining outside to carry two spiral springs that allow the bar to rise and accommodate varying thicknesses of negative mask and paper. To this piece hinge the end of the back after removing the two springs. These last are to be shortened a little, then reversed and fastened to a handle, the end of this handle being hinged to a block screwed just clear of the back end of the frame. This block should be of such a height that when the handle is brought down the springs will give the right amount of pressure. An ordinary cupboard door catch can be screwed to under side of handle with the little ledge piece fastened to edge of frame and this will keep handle down when one wishes to avoid the necessity of holding it with the hand. Short pieces of small chain, one end attached to the handle and the others to the two parts of the back, will cause these last to lift, the near one much sooner than the other, according to the length of the chains, as the handle is raised. The sketch herewith should make this all quite plain.



Over the larger opening used for border printing do not put a printing frame; simply let in a piece of plate glass flush and held in place by rabbets. On this I lay my border mask, then the print being bordered and on top of this another glass as a weight. This I find sufficient and much less trouble than a frame and back. In the chamber beneath the larger opening place four sixty-



TWO PLEASING PORTRAITS

watt tungsten lamps, fastening the sockets to two wooden strips across the bottom, and arrange a switch to turn them on and off. This is to be used when one does border printing. Six lamps of a smaller size, arranged on three wooden strips, might be better through giving a larger printing area. When one is not printing, the pieces cut out for the light openings can be returned and made to stay in place by means of some small cleats, thus making the top available as a table. The whole box, including the top, can be stained some suitable color and then given a coat of varnish or shellac. So treated, the paper or fiber board is as durable and serviceable as wood.

When used for enlarging, the same lamp employed in printing will be found sufficient. Cut a 10x12 opening in an available wall or partition, the piece taken out being given an edging to prevent its falling through, with some turn buttons on the opposite side to prevent it falling out, so that it can be replaced when the opening is not in use for enlarging. The center of this opening should be of such a height that it is in line with the center of the enlarging easel in position on its run or track, the end of latter resting on the top of the printer. The Eastman Kodak Company furnish an enlarging back arranged to hold an opal diffusing glass, one sheet of which is sufficient. This is readily attached to the opening by means of small strips fastened on so that light cannot escape around the edges. If this is not used, make a small frame around the opening that will just receive the back of an ordinary view camera; this to be held in place with a couple of hooks. For my enlarging easel I made a frame about 24x36, which is large enough for most uses, and covered this with a sheet of the fiber

board. For the runway I use a ten-inch board, for a seven and one-half inch lens one three and one-half feet long being about right. Using my 5x7 Wollensak Velostigmat, this gives me enlargements up to 24x36 from my 5x7 negatives. This ten-inch board has a strip nailed along each edge to project above its surface just the thickness of the board itself. These form guides, between which slide a piece of the eight-inch board that has been screwed to the bottom of the easel to form a base or support. One end of this runway or track for the easel rests on a ledge or cleat nailed to the wall just below the camera opening and the other end rests on top of the printer just described, with its two light openings covered by the pieces taken out in cutting them.

The light, the 750-watt Mazda C lamp, screwed into another Mogul socket at the top, is enclosed in a box about two feet square and twelve inches deep. In the back of this is bent a piece of bright sheet tin to serve as a reflector, the rest of the interior being covered with sheet asbestos. This light containing box is placed on a shelf outside of the wall over the opening, or it can be hung by hooks from the ceiling or wall. It should be placed at a convenient distance from the opening, this distance being best judged by observing the illumination secured at different distances. The whole of this enlarging equipment can be quickly and easily taken down and hung on the wall or put in some convenient place out of the way. The camera, being removable, the piece cut from the wall is put back in place, and there you are, everything out of sight and out of the way.

A double-purpose printer constructed along these lines will be found a great convenience. The opening fitted with the 11x14 printing frame and the back altered for the purpose make printing rapid and convenient. I have my own patented device that is somewhat of an improvement on the printing frame, a device that I will place on the market later. The larger printing surface, the plate glass covered one, will be found just the thing for border printing, making that part of the work much easier than usual.





The Illusions of Cinematography

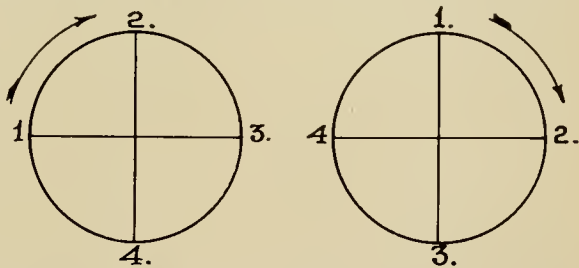
By Charles I. Reed



With Illustrations by the Author

Motion pictures depend for their very existence on the fact that the human eye is very easily deceived. A motion picture, when projected, does not show motion. It shows only a small part of it, but our eyes have the faculty of retaining the impression of one phase of motion until the next follows a fraction of a second later. By thus mentally and unconsciously joining the different steps of movement, we deceive ourselves into believing that we see the real action that took place before the camera. Although the movement of most ordinary objects appears to be perfectly natural, the illusions of motion picture photography are revealed in many cases by objects that persist in motions that are contrary to all our experiences, such as the wheels of a vehicle revolving backwards while the vehicle itself moves forward, the rapidly flying propeller of an aeroplane appearing to stand still, and so on. Who has not wondered at the quaint movements of the wheels of automobiles and other vehicles when moving at right angles to the camera? In many cases, when such films are projected, the wheels are seen to move backwards, then stand still, and then the spokes are seen to multiply in number! This is a very common illusion; in fact, in very few films are the spokes of a moving wheel represented as moving in harmony with the forward movement of the vehicle. This is due entirely to the intermittent nature of the representation of motion, and the fact that only a fraction of the amount of movement is recorded by the camera.

The illusion can best be explained by taking as an example a moving wheel having only four spokes. Assuming the wheel to be in the position shown in the first or left-hand figure of the sketch herewith and the motion picture camera in operation. The first picture is taken with the wheel in this position. The shutter closes and the film moves into position for the next exposure. In the meanwhile the wheel revolves into the position shown in the second or right-hand figure, at which moment the second picture is taken. The wheel has completed a quarter revolution, so that spoke three now occupies the position occupied by spoke four in the first picture. If this speed of camera and wheel continues at the same rate, the wheel will apparently stand still in the projected picture, because each spoke alternately assumes the same position as that occupied by the preceding spoke in the former picture. All the spokes being alike, the eye



cannot detect any revolving movement of the wheel, the only apparent motion being the forward movement of the whole as it moves along with the rest of the vehicle. If, however, the speed of the camera and the spokes is such that the spokes move only three-quarters of the distance between them between each picture, then the projected picture will give the impression that the wheel is revolving backward, while at the same time traveling along the ground in the opposite direction.

These effects, being in direct opposition to all our experiences, are distracting when observed in photoplays, and producers of films seek to avoid them as much as possible by having all vehicles move at an angle to the camera so that the spokes do not show in the resulting pictures, for it is almost impossible to so synchronize the movement of both camera and vehicle as to have the wheels move in a natural manner. Natural movement is only obtained when the spokes move a greater distance than the angle between them between each exposure. Another curious illusion often noticed in such pictures is an obviously superfluous number of spokes in a wheel. This effect is the result of the spokes moving exactly half the distance between them between each exposure. Thus, in the case of our illustration, the number of spokes in the wheel would apparently be eight instead of four. The same kind of illusion is often present in pictures of aeroplanes, the propeller appearing to stand still, move backwards, and very often apparently having a multiplicity of blades, all these illusions being noticed in the space of a few seconds, due to the changes of speed. These effects are obtained only when the camera shutter is adjusted to give a very short exposure. The only way in which an aeroplane can be cinematographed so as to give a natural effect is to employ a slow shutter speed, thus blurring the propeller so that the only indication of its presence is the glint of light striking it from an angle. This is a perfectly natural effect, the same as is observed by the eye.

One of the most beautiful and agreeable of cinematographic illusions is the wonderful stereoscopic effect presented by a large moving object photographed so as to fill a greater part of the screen. The integral parts seem to stand out in bold relief from the background, and one gathers a very comprehensive idea of their length, depth and breadth, the same as is observed in a true stereoscopic photograph, with the difference that the moving objects only seem to possess solidity, all the stationary objects in the pictures being rendered as plane surfaces. If, on the other hand, the cinematograph camera is placed on the moving object itself, the whole of the resulting view stands out in bold relief and one obtains a true stereoscopic impression of the distance between various objects. This effect is due to the fact that all the planes are moving continuously, those in the foreground moving with greater rapidity than those more remote from the camera. This effect is very noticeable in all motion pictures taken from moving automobiles, ships, trains, and aeroplanes, in the latter case the spectator being given a startling impression of looking down from a great height, an impression not created by still pictures made from the same viewpoint. The writer well remembers the first exhibition of a motion picture taken from a monoplane at a great height, the camera being placed in such a position as to point almost straight earthward. The dizzy effect of looking

THE ILLUSIONS OF CINEMATOGRAPHY



A DISCIPLE OF IZAAK WALTON

downward from the great height was so realistic that a lady seated close to the screen gave a shriek, and promptly fainted! The stereoscopic effect at the great distance was due entirely to the speed at which the camera was moved at right angles to the objects below.

In some ways this stereoscopic illusion is not strictly true, in that it does not give the same impressions of the distance between distant objects as observed by the eye. Our eyes are so placed as to observe the distance only between vertical planes, all horizontal lines being judged in comparison. If, however, the motion picture camera is so placed that it moves toward the object being photographed, then the resulting picture will show the stereoscopic effect



NOT FAR FROM THE HOME NEST

between the horizontal planes. If the camera moves in both a horizontal and vertical angle to the subject, then the resulting stereoscopic effect will be doubled, and we actually gain a better idea of the distance between objects than when viewing the subject itself.

The scientific application of the art of cinematography has rendered possible the study of many different phases of motion that would otherwise be invisible to the eye. By increasing the length of the intervals between consecutive exposures, many of the slower processes of nature have been "speeded up" so as to become plainly visible when the pictures are projected at the normal speed. The growth of a plant, the opening of a flower and the change of the seasons have all been rendered visible by making exposures at comparatively long intervals, and projecting them at the usual speed. These pictures possess great popular interest, and are very valuable to the student. The versatility of the cinematograph is shown by the fact that it has been employed successfully for rendering visible motions that would otherwise be far too slow or too rapid for the human eye to follow. Such rapid motions as the flight of a bullet, the motions of the wings of an insect, and so on, have been rendered visible by photographing at a very high rate of speed, several investigators having designed cameras capable of taking pictures at speeds approaching ten thousand per second. At such a high rate of speed it would of course be impossible to give sufficient exposure to each of the pictures, were daylight employed as the illuminant, and therefore the electric spark is employed instead. A spark produced by high-tension electrical current is of such short duration that no shutter is required, the spark illuminating the bullet or other subject for such a short time that all blurring due to the rapid movement is avoided. When a film taken at the rate of ten thousand pictures per second is projected on a screen at the normal speed of sixteen pictures per second, the speed of the moving object is reduced about six hundred times and made plainly visible to the eye. A bullet photographed and projected at these comparative speeds will, on the screen, appear to be merely crawling, so that the air waves and gases following in its wake can be carefully studied. Apparently it would be hard to find a subject with more rapid motion than a bullet in flight, but the cinematograph has proved that there are subjects that move even faster, such as the wings of a bee or dragon fly. The rapid motions of the wings of many insects have taxed even the rapidity of the special electric spark apparatus, but in some cases very interesting and instructive pictures have been obtained showing the methods by which an insect regains its equilibrium when upset and the motions of its wings in flight. Such pictures are very interesting to the layman, as well as to the student of nature and of aeronautics. The possibilities of the cinematograph for motion study offer a very attractive field to those of a scientific bent.

The "punch" is only a matter of mental muscle. Anybody can produce the "pep" who chooses to ginger himself into the mood. But it takes those fine, long, gray fibers to give birth to an idea, and he who can come across with one now and then is the only man who is really worth his chloride of sodium.—
LEROY FAIRMAN.



Photographing The Game

By C. H. Claudy



With Illustrations by the Author

What game? There is only one, at this time of the year at least. Baseball—baseball, that has a greater daily audience from April to October than all other athletic sports combined the world over!

The casual user of a hand camera usually finds his baseball pictures a bitter disappointment. He sees strenuous action on the field, exciting plays, close plays, hair-raising plays. On the plate, he gets either a lot of wooden Indians dressed in baseball uniforms, or else his pictures are often a mere blur, showing action in plenty, but detail not at all. His figures, if sharp, are tiny, and if large, are distorted. Hence he carries his camera no more to the ball park and puts baseball down in his little catalogue of those things he cannot picture with any satisfaction.

Now it is perfectly true that the trained newspaper photographer, using an ultra rapid plate, a huge lens of twelve to fifteen inches focus on a 5x7 plate, a focal plane shutter, a mirror reflecting camera, and with permission to roam the side lines at will, will probably succeed in getting more pictures, and better ones, than the spectator who is compelled to use a postal-card camera with a rapid rectilinear lens, from the grandstand. And if it is your idea to imitate the professional, and be satisfied with nothing less than the duplicate of those results that so delight the heart of the fan in the Sunday morning pink sheet, there is no better advice to be given than to go buy a newspaperman's photographic outfit and learn to use it. But, for most purses, this is prohibitive in price, and the use of such an outfit is beyond the skill of the average user of a camera, to whom it is an accessory to a good time, not the main provider of it. Therefore, some other scheme must be evolved if the baseball bug and the microbe of the camera are to fraternize.

The first answer to the problem is a thorough understanding of the game. Ninety-nine men out of a hundred have it; the hundredth can learn. The second is the willingness to compromise between the pink sheet wonder, in the way of a picture, and the failure which comes from trying to make a photograph without knowing how. There is no reason why any one cannot get good and attractive baseball pictures with an ordinary camera, if he is willing to pick and choose and does not simply blaze at everything he sees, and is satisfied with good pictures of the things he can take and to do without those he cannot make.

In the first place, then, let it be said that with the rapid rectilinear lens and the ordinary between-lens shutter, the small camera is to be preferred to the large one in making baseball pictures. Of course, a small camera and a

small lens will give small images. These small images can often be enlarged, but if they cannot, then the small picture and willingness to accept it are your first point of compromise. The reason the small camera is to be preferred to the larger is found in the speed of the shutter. Admitting that the one-hundredth of a second exposure of a between-lens shutter is actually that time, it will produce a sharper picture with a four or five inch lens than with a seven or eight inch lens, from the same standpoint, because the relative motion of the moving image of the ball player on the plate or film is less as the focus of the lens is less.

In the second place, one must make up one's mind to this particular compromise—either to retire a considerable distance from the paths, or not attempt to take a runner at right angles or anything near a right angle. If one has or can get permission to approach the lines, then he must make up his mind that any picture of a runner at right angles is going to be blurred, simply because one one-hundredth of a second is too slow to enable him to stop such motion.

But in a small camera the one one-hundredth of a second is amply sufficient to stop motion taken head on, or nearly head on: at least, if that motion be a running baseball player. Nothing but a focal plane shutter and extreme speed is going to catch the ball on the plate. There are photographs made, wonderful photographs, showing the ball almost caught or even in the air between pitcher and batter. There are even pictures which show a batted ball, but they are rare, and none of them are made with the ordinary hand camera.

By "motion head on" is understood, for instance, such a picture as that shown in our first illustration, in which Baker the Mighty is waiting for the ball while some very-much-in-a-hurry baseball player dives head first for third base. The motion of the diving player is almost in line with the camera. Baker, though evidently tense, is motionless. The ball is—somewhere, no one



SAFE OR OUT?

PHOTOGRAPHING THE GAME



JUST AS THE ACTION CLOSED

knows where. Such a picture as this, made from nearly behind third base and with the runner coming toward the lens, is easily made with the ordinary hand camera.

Motion across the plate is shown in the next illustration, in which a madly sliding runner has been touched out by the deft hands of good old Charlie Street. A tenth of a second later, this picture could have been made with any camera, for by that time the base runner would have stopped sliding. At the end of nearly every close play in baseball there is a moment, only a tiny fraction of time, when everything slows up and almost stops. If the shutter can be



A SUCCESSFUL "BLOCK OFF BASE"

snapped in that tiny fraction of a second of time, pictures that appear to show very fast motion can often be secured with an ordinary camera. But it takes a nice bit of judgment to make the snap at that particular instant, and one has to be able to make the exposure without stopping to think.

Such an effect is seen in Figure 3, the last illustration, in which "Germany" Schiaeffler, one time second baseman of the Detroit Tigers, later utility with Washington, and now gone to other fields and pastures new, is blocked off third base. He has just stopped sliding; the third baseman has just stopped thrusting the ball at him. The swift motion is stilled for a fraction of a second.

The reader will notice, also, in looking at this last picture, that one appears to be looking down on the scene. This is because the maker was in the second story of the grandstand, while in the other two he was on the ground. Notice particularly the long foreground in the first, which, in its fuzz and indistinctness, shows that the camera was held near the ground.

The only plays that are easy to photograph are those at first, third and home. Second-base plays are too far off for anything but a lens of extremely long focus or of telephoto build; and, of course, plays in the outfield, except in amateur games in which the fielder has no objection to being followed around by a man with a camera, are impossible. Pictures of pitchers are usually disappointing, because showing nothing but a man in an attitude. No single-figure baseball picture holds much intrinsic interest.

If one will remember to get behind the motion or in front of it, to pick the moment when the swift motion has come to its instant's stop, to use his fastest shutter speed and the largest opening of his lens, to focus accurately, to use a fast plate or film, and to be content with small figures, and not to try to imitate the professional (as in the second illustration), there is no reason why he should not combine the pleasures of the ball field with those of the dark-room and secure many a pleasant souvenir to paste in his score book as food for fanning bees when the winter winds begin to howl again and baseball is a thing of the summer gone by.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

TRANSLUCENT COMPOUND: For crystalcum or glass paintings. Castor oil, four ounces; gasoline, two and one-half ounces; nitro-benzole, sufficient to scent. Mix and shake.—T. E. P., California.

TO PHOTOGRAPH STAINED-GLASS WINDOWS: Prepare some crocus martus with water containing a little gum, either arabic or tragacanth, to hold it in place, and paint the back of an Isochromatic plate. To make more sure of obtaining your color values, use a good color screen, one between the light red and yellow. A Voigtlander apochromat lens is recommended for this class of work.—T. E. P., California.

A CONVENIENT POST CARD PRINTING FRAME: Sending in an order recently for some supplies, I included a 4x5 and a 3¼x5½ printing frame. When these arrived, I knocked them apart, and, using the shorter sides of the first and the long sides of the latter, I made a new frame, 4x5½, just right for printing post cards from 4x5 negatives, using a mask over one end. The "ears," or whatever they are called, were moved to the proper position to engage the springs on the 4x5 back which I use in this new frame. This back, of course, does not entirely fill the frame, but it is only required to cover the negative, which it does. This frame has given such satisfaction that I have ordered two more from which to make a duplicate so that I can be loading one while the other is printing.—V. W. H., New Hampshire.

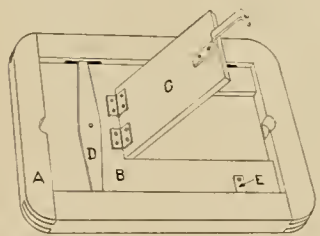
GOOD NEGATIVE REDUCER: To reduce intense negatives or portions of negatives without reducing the thinner places, nor injuring the plate, immerse in a one per cent solution of persulphate of ammonium, Merck's crystals, until just before intensity is reduced sufficiently; after which drain and, without rinsing, place in a solution of sulphite of soda, ten per cent, for fifteen or twenty minutes, until the action of the persulphite is entirely checked. Then wash as for any other method. This process is useful where interiors are made, giving very intense fore or middle grounds, leaving backs and sides weak; develop up the weak places, paying no attention to the increasing intensity of the fore or middle grounds, which can be reduced later, after the hypo has been eliminated. To obtain the one per cent solution of persulphate of ammonium, add twenty-four grains to five ounces of water; for ten per cent solution of sulphite of soda, add one-half ounce to five ounces of water.—T. E. P., California.

WORKING IN CLOSE QUARTERS: A few days ago I wanted to take a picture of an interior in my home and, as usual in such cases, wanted to get the camera as far back as possible from the part to be taken. With the camera

CAMERA CRAFT

back against the opposite wall I could not see what I was getting on the ground glass, and with the camera sufficiently away from the wall to overcome this difficulty, I lost too much of the picture. So I set a small table against the wall, placed the camera out to the front edge, and then had room to get my head behind the ground glass so that I could arrange the picture. I next closed the shutter and withdrew the slide carefully so as not to move the camera. Then I placed a straight-edged board along one side of the camera with one end against the wall. Holding this firmly with one hand, I slid the camera along the straight edge clear back to the wall, opened the shutter and made the exposure. Working in this way, one must see that the front edge of the table does not cut off some of the picture; but if it does, just set the camera up on a small box. The smaller the room the more need of saving in distance and this plan requires only the board and a table, and both are always available.—W. H. B., Maine.

A PRACTICAL POST CARD PRINTING FRAME: There are, no doubt, many readers of CAMERA CRAFT who make post cards for their local trade, but do not make them in quantities large enough to justify the purchase of one of the somewhat expensive printing machines. This was my trouble. I do enough of this work to find the ordinary printing frame slow and tedious, the most annoying feature being the difficulty of getting the same portion of the negative



beneath the card each time. The illustration shows how I arranged a frame and overcame this difficulty. The device has since been found most effective. I took an old $6\frac{1}{2} \times 8\frac{1}{2}$ printing frame, took the springs and hinges from the back, then, from a piece of the proper thickness, cut a new, one-piece back that fitted snugly. Then in this last I cut a $3\frac{1}{2} \times 6\frac{1}{2}$ opening, hinging piece shown as C in sketch, where B represents the new back and A the printing frame. D shows one of the original springs attached to the new back, while E, E and F represent clamps made from the other spring after it has been cut into three suitable pieces with a file or cold chisel. The end spring, F, is longer, should reach over edge of frame, bend down and catch over the end of a wire nail that has been driven in and its head filed off. If one does not care to go to the trouble of fixing this last, just a short piece of spring can be fitted to serve as a handle in opening and the necessary pressure secured during printing by grasping with the hand. To use, first put in a cleaned negative glass to fit, then put in the negative and clamp down by putting B in place and clamping D and E, E. Open C, insert card, close and clamp with F, expose front to light, open C, remove card and repeat. If the negative be a glass one of a size smaller than 4×5 , the space around its edges should be filled out with strips of old mount of an equal thickness in order to make the pressure even. If smaller than the opening C, cut a mask with an opening a trifle smaller than the negative and proceed as before. The pressure of B around the edge of the mask will hold the film in place and keep it from slipping.—Reverend P. W. Weber, Wisconsin.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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Our Interests Too Scattered

When one says he is interested in photography, and I imagine we have about all of us used that phrase, does he stop to think how vague and indefinite the statement really is? And if one does stop to think, does not the sister thought come to him that perhaps his interest is equally vague and indefinite? And still another thought might well follow, namely, that perhaps therein lies the reason for the interest being less keen and the results less satisfactory than they should. Quite naturally we ourselves happen to know something about the photographic career of a large number of those who have long been interested in photography. Some are keenly interested today, others have lost much of their original enthusiasm, and still others have simply floated along and produced the average, ever-increasing collection of negatives so characteristic of the amateur, the composition and technique slightly improving as experience is gained. But when we come to the cause for the difference in the degree of interest maintained, there is a lesson to be learned, a lesson well worth taking to heart. The man whose interest is as keen as ever is the one who is not only interested in photography, but is interested in some particular phase thereof. One of these men specializes in night scenes, another in pets and domestic animals, while the third has a collection of fine negatives that comprises almost every flower that blooms in this favored land, and he is still adding to it. Were there more of this specializing, it would mean a vast improvement in the quality of the work turned out each year. Instead of each worker having a most varied and commonplace assortment of the usual things, we would have a few excellent pictures of one kind here, of another kind there and so on through the list. Each would have something worth while to show for the expenditure of time and money that his hobby involved. And, best of all, each would have the satisfaction that comes of accomplishment as against the decrease of interest that is certain to follow when results are but commonplace and there is nothing with which to stimulate a continuance.

Our New Competition

We will try once more to encourage some well-directed efforts along the line of pictures suitable for the cover illustrations of farm or agricultural publications. As before, there will be no rules or regulations, and we are not at all particular about the size or style of the prints sent in. While we will make no use of the prints submitted except as we may wish to reproduce, in small size, a few of them, grouped, as we did in our last competition, we cannot undertake to return any of the originals. Our doing this last is a matter that necessitates too much work. As to what is wanted, we can only suggest that the reader secure a few copies of farm publications and judge therefrom. He will find

that pictures of an upright form are generally used, that there is shown enough good quality to plainly indicate an original negative having good detail and fair contrast, and that interest is demanded over either mere prettiness or artistic quality. What the editors of the farm publications desire seems to be a good, clear photograph of some farm scene that contains human interest or that is at least of interest to that important portion of our population that produces our agricultural wealth. Farm life today is certainly attractive and enjoyable and it should be so pictured. Farming is an occupation worthy of the best efforts of the best minds and that fact should not be made to appear less absolute than it really is. The intelligent farmer is rarely other than a prosperous individual, and farm pictures should suggest comfort and prosperity. Much that the modern farm presents in the way of incident and occupation is of interest, and a portrayal of different phases of agricultural activities should not lack that same quality, if properly done. There is a market for such pictures as will meet with the approval of our editors of farm papers and there is much of interest in striving to supply what is wanted. As we have tried to explain in the editorial above, working with a definite aim, working along a special line that demands study and thought, gives interest and gives satisfaction when success is achieved. Any reader who may desire to avail himself of our help or criticism is promised both if he will but make the request. For the present there will be no closing date announced and unless sufficient interest is displayed there will be no prize awarded, and in any case the prize or prizes will be but a small matter. On the other hand, we do propose to help our readers, or that portion of them who may interest themselves in this competition, by pointing out a special line of photographic endeavor, by helping them as we can along that line, and should success be achieved, afford them the satisfaction of winning in a field that presents difficulties worthy of their best efforts.

H. C. Gorton In San Francisco

H. C. Gorton, the genial general manager of the Wollensak Optical Company, paid San Francisco a flying visit the latter part of February, his stay being limited to one day. From this city his trip took him to Los Angeles and he hoped to be able to make a few of the most important towns in the Middle West before returning to Rochester. The large business being enjoyed by the factory did not permit of the trip being made other than a most hurried one, and an opportunity of personally meeting the members of a few of the firms with which he was doing business seemed his principal object.

Californians At The Pittsburg Salon

The catalogue of the Third Annual Pittsburg Salon held by the Photographic Section of the Academy of Science and Art of Pittsburg at the Carnegie Institute, has just reached our desk. Ninety-four exhibitors are responsible for the two hundred and ninety-nine pictures shown, and we are pleased to find that eighteen California workers are represented by sixty-seven pictures. This is over twenty-two per cent, a most gratifying showing in the face of the high standard of excellence that is maintained and the popularity of this Salon with the best workers of the country.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

A Table of Hyperfocal Distances

Ordinary tables of hyperfocal distance are calculated throughout for a single circle of confusion, in English tables usually one-hundredth of an inch. This seems an unscientific process, as the sharpness required in negatives taken for cinematographic purposes

and A , the f number. The table is usually calculated for a single circle of confusion, one-hundredth of an inch, for all focal lengths, but as the definition required for motion pictures or small negatives for enlargement made with short-focus lenses is much greater than that needed for portraits,

Focal Length	Circle of Confusion	f Value of Lens															
		1	2	3	4	5	6	7	8	11	13	16	22	32	45	2	64
2	$\frac{1}{400}$	70	61	38	32	30	25	21	19	17	12	$8\frac{1}{2}$	6	4	3	2	
3	$\frac{1}{400}$	158	136	86	71	67	56	48	43	38	27	19	13	$9\frac{1}{2}$	$6\frac{2}{3}$	$4\frac{2}{3}$	
$3\frac{1}{2}$	$\frac{1}{300}$	161	139	88	73	68	57	49	44	38	27	19	14	$9\frac{3}{4}$	$6\frac{3}{4}$	$4\frac{3}{4}$	
4	$\frac{1}{300}$	211	182	114	95	89	74	63	57	50	35	25	18	13	9	$6\frac{1}{4}$	
$4\frac{1}{2}$	$\frac{1}{300}$			145	121	113	94	80	72	63	45	32	22	16	11	$7\frac{1}{2}$	
5	$\frac{1}{250}$			149	124	116	96	83	74	65	46	33	23	16	12	$8\frac{1}{8}$	
$5\frac{1}{2}$	$\frac{1}{250}$			180	150	140	117	100	90	79	56	39	28	20	14	10	
6	$\frac{1}{250}$			214	179	167	139	119	107	94	66	47	33	23	17	12	
$6\frac{1}{2}$	$\frac{1}{250}$			252	210	196	163	140	126	110	78	55	39	28	20	14	
7	$\frac{1}{200}$			292	243	227	189	162	146	128	90	64	45	32	23	16	
8	$\frac{1}{200}$			305	254	237	198	169	152	133	94	67	47	33	24	17	
9	$\frac{1}{200}$			386	321	300	250	214	193	169	119	84	60	42	30	21	
10	$\frac{1}{150}$			357	298	278	231	198	179	156	110	78	55	39	28	20	
11	$\frac{1}{100}$			288	240	224	187	160	144	126	89	63	45	32	22	16	
12	$\frac{1}{100}$			343	286	267	222	190	171	150	106	75	53	38	27	19	
13	$\frac{1}{75}$				252	235	196	168	151	132	93	66	47	33	23	17	
14	$\frac{1}{75}$				292	272	227	194	175	153	108	77	54	38	27	19	

or with a small hand camera for ultimate enlargement must be more critical than in the case of long-focus lenses, used mainly for portraiture.

I enclose herewith a new table of hyperfocal distances, calculated for the most important stops, and with varying circles of confusion, for lenses of different focal length. I believe that this may be more generally useful than the older form of table.

This table shows the nearest point in sharp focus when objects infinitely distant are focused on. It is calculated from the formula

$$hf = \frac{F^2}{12 \times A \times u} \text{ where } hf \text{ is hyperfocal distance in feet; } u, \text{ diameter in inches of the circle of confusion or greatest allowable unsharpness of the image of a point; } F, \text{ the equivalent focal length of the lens in inches,}$$

the value of u taken for each focal length is given. If the lens is focused on objects at the distance given in the table, the sharpness will be satisfactory between half that distance and infinity.—Frank R. Fraprie in *British Journal of Photography*.

The Circle of Confusion

Our correspondence columns contain a letter by F. R. Fraprie on the subject of hyperfocal distance, in which he points out the very obvious fact (often forgotten) that it is not sufficient to allow a circle of confusion of one-hundredth of an inch in all cases. Short-focus lenses producing small pictures that are subsequently enlarged, of course, require a much smaller circle of confusion, while a bigger one is permissible with lenses of long focus. He gives a very useful table

in which one four-hundredth inch is allowed for lenses of two to three inches focal length; one three-hundredth for lenses of from three and one-half to four and one-half inches; one two hundred and fiftieth for five to seven inch lenses; and so on down to one seventy-fifth inch with lenses of from fifteen to twenty-four inches focal length. These allowances seem to us to be very well selected, and the table is therefore a useful one, but it must be pointed out such a table is only of service to anyone who considers the matter of depth from what we may term the old point of view. If we adopt the more modern view that depth depends solely on the diameter of the aperture used, then a similar result is arrived at, the circle of confusion varying inversely with the focal length. It will perhaps be interesting to compare the two methods, taking as a standard allowance of confusion one one-hundredth inch for a twelve-inch lens, which is Mr. Fraprie's allowance, the last two columns showing the resultant circles of confusion with varying focal lengths.

Focal Length	Modern Method	Mr. Fraprie's Table
2.....	$\frac{1}{600}$	$\frac{1}{400}$
3.....	$\frac{1}{400}$	$\frac{1}{400}$
4.....	$\frac{1}{300}$	$\frac{1}{300}$
5.....	$\frac{1}{240}$	$\frac{1}{250}$
6.....	$\frac{1}{200}$	$\frac{1}{250}$
7.....	$\frac{1}{170}$	$\frac{1}{50}$
8.....	$\frac{1}{150}$	$\frac{1}{200}$
9.....	$\frac{1}{132}$	$\frac{1}{200}$
10.....	$\frac{1}{120}$	$\frac{1}{150}$
11.....	$\frac{1}{110}$	$\frac{1}{100}$
12.....	$\frac{1}{100}$	$\frac{1}{100}$

It will be noticed that the results agree for three, four, five and twelve inch lenses, and very nearly agree for some of the others. The modern method, however, gives a scale that is more systematic throughout.—*British Journal of Photography*.

Finding The Focal Length

Numerous methods of finding the focal length of a lens have been devised from time to time, and no doubt many more will appear in the future, but anyone desirous of inventing more, or of selecting for use some one of the many which already exist, would do well to bear in mind some points which have been too frequently forgotten. Most of the easier methods depend on making certain adjustments of the camera and obtaining certain measurements, such as the amount of camera

extension, amount of reduction of the scale in the image, etc. All such measurements are liable to errors; in fact, errors cannot be avoided without much more complex and exact measuring instruments than photographers possess, and in a series of measurements such errors may become cumulative, so that the final error is very considerable. An experienced measurer will bear in mind the purpose to which the measurements are to be put, and if exact measurements are impossible, he will take care that such errors as exist as far as possible balance and do not become cumulative. That is to say, if his aim is to get two figures that are to be multiplied together, he will take care not to make a *plus* error or a *minus* error in both of them. If he cannot get both exact, he will make one measurement rather "full," and the other "bare," or "short." On the other hand, if the results are to be divided, he will take care that the errors are the same, both measures being either full or both bare. Precautions of this kind are things that the average individual is quite unaccustomed to, and he cannot be expected to take them at all, excepting in very simple cases when he has been warned. Therefore, the only safe methods of calculating focal length for him to adopt are those involving as few measurements as possible. One of the simplest methods, and the one perhaps most suited to ordinary purposes, is due to Chapman Jones. It is as follows:

1. Find the infinity mark by focusing on an object at an extreme distance, and marking off somewhere on the camera the extent to which it is racked out.

2. Rack out and focus sharply on a near object of known size.

3. Measure size of image, and divide it into that of object, so finding a ratio, which we will call *r*.

4. Measure additional extension of camera beyond infinity mark, and call this amount *x*.

Then the focal length is equal to *x* multiplied by *r*. The first of these operations, finding the infinity mark, is not difficult. Using ordinary care in focusing, a good magnifier, and an object a great distance off only a small error should exist, even if the distance is not exactly infinite. What error may exist is, however, likely to be a *plus* one—that is to say, the infinity mark is likely to be a little too far from the ground glass.

A PHOTOGRAPHIC DIGEST

This should be borne in mind when taking the measurement in the fourth operation. Here we want the extra extension for a near object; that is, the difference between two extensions, one for infinity, and one for the near object. Therefore, in view of the fact that the marked extension for infinity is likely to be a little too great, we must take special care that the extension for the near object is not too little, and we must also measure the difference rather full. For example, say the extra extension seems to measure as nearly as possible fourteen and a half millimetres. It is better to take it full, and call it fifteen, than to take it short and call it fourteen, for the former is more likely to be correct. Remember, however, that fifteen is a full measurement.

The third measurement is that of the image only, the size of the object being known. If we use a graduated measure for the object, its size may be taken as exact. Therefore, we want to get the image also as exactly as possible. This size has to be divided into the known size of the object, and the result multiplied by x , which we have measured full. Therefore, we want a result that is under rather than over the mark, and must measure the size of the image full. Dividing the result into the size of the image, we get r . The most important measure to get accurately is x , and this depends mainly on accurate focusing. As a rule, this presents little difficulty to an experienced photographer, who is most likely to err in his selection of an object distant enough to serve for an object at infinity. The moon is excellent for the purpose, but in daytime we want a terrestrial object, and it is important to remember that the longer the focal length of the lens the farther away should the object be. For a five-inch lens an object two hundred yards away may be considered far enough, though any greater distance is to be preferred. For an eight-inch lens the object should be at least a quarter of a mile away, and half a mile is better. A ten-inch lens requires an object half a mile away, and a sixteen-inch lens one at least a mile away. These minimum distances ensure only that the infinity mark is placed within one-two hundred and a fiftieth of an inch of the right place. This error diminishes inversely as we increase the distance, so that doubling the distance halves the error. It is

therefore apparent that it is better to take greater distances wherever possible.

This Chapman Jones method is one of the simplest, and if we exercise ordinary care and remember to measure each of the two dimensions full it gives very accurate results. This cannot be said of other methods which involve more than two measurements, and so a much greater probability of increased errors. It should be observed that the only condition that will necessarily prevent this method from giving accurate results is distortion. If this defect exists, it will affect the ratio of object to image, and so upset the final result, but we can guard against any such effect by taking care that the image does not cover too wide an angle. Thus with a single lens that gives distortion, or a portrait lens, the near object upon which we focus should not be too near, and we should arrange matters so that the image only occupies the centre of the ground glass. We want an image just big enough to measure easily, but not big enough to appear in parts of the field where distortion becomes evident. On the other hand, with a rectilinear lens, or any other lens of symmetrical construction that does not give much distortion, the nearer we approach to a scale of full size the less is the distortion. Therefore, we want a near object and an image as big as we can conveniently measure and as the lens will depict sharply.

Methods that involve focusing on near objects at two different distances are best avoided. There are several methods of this type, but it is very difficult to apply any of them accurately. They involve too many measurements, and some of these measurements are by no means easy to get. Some methods involve the evolution of square roots, and are naturally avoided by most people, and the only other one that we are prepared to advise is that known as the Grubb method. This is a geometrical method, and involves a little careful drawing, which, though nothing at all to a draughtsman, may give trouble to others.

Rule two vertical lines on the focusing screen some known exact distance apart, say, two inches. Stand the camera on a table top upon a sheet of white paper, focus on some distant object at approximate infinity, and direct the camera so that the image falls directly on one of the vertical lines. Then take a pencil and rule a line by the side of

the camera upon the paper underneath. This paper should properly be pinned down to prevent shifting. Having done this, turn the camera so that the same image falls on the other vertical line. Then rule a second line on the paper along the same side of the camera as before and crossing the first line.

This gives us two lines on the paper meeting at an angle like the sides of the letter A. Complete the A by drawing the cross bar, and making it exactly equal in length to the distance between the two lines on the focusing screen—that is, two inches. This must be done very carefully, the cross bar being of precisely the right length and exactly at right angles to a line bisecting the angle at the top of the A. The distance from the apex of the A to the centre of the cross bar is then the focal length. This is a very excellent method, but not always a convenient one. We mention it chiefly as a useful alternative to the other, and, when possible, it can also be employed as a check method.—*British Journal of Photography*.

Playertype

We recently received a letter from Martin R. Robertson, of Platteville, Wisconsin, dealing with experiments he had been making concerning the copying of manuscripts, books, etc. In it he says, "In making some experiments last summer regarding the nature of halation, I reasoned as follows: If halation is caused also by reflection through the emulsion, then if some reflecting surface is bound directly in contact with the emulsion when the exposure is made, that part will receive more exposure than under ordinary conditions. But, conversely, if some absorbing or light distracting medium is bound into contact with the emulsion, opposite results should ensue. To test this theory I put a piece of glossy contrast Cyko with its back or paper side against a clean glass in a printing frame; against the emulsion side of the Cyko I placed, face down, a slip of printed newspaper, and then closed the back. The exposure was quite long, but results were very successful; not only proving the theory but showing me a new way of making successful copies. A strong contrast developer proved the best. Perhaps this method has been tried before, but I have never heard of its use. I hope you may be interested in this process and may give it a trial if you have not done so already."

It is remarkable how almost every conceivable process in photography has occurred independently to different people. It is a matter of twenty years ago that the idea here put forth was embodied in a process by J. Hort Player, becoming known in a quite limited way, it is true, as Playertype. On reading Mr. Robertson's letter, a faint recollection of this occurred to me, and it was some time before I could hunt up the following description of Playertype given in *Cassell's Cyclopaedia of Photography*, and which I here reproduce:

"A process for the direct copying of engravings, invented by J. Hort Player in 1896. The engraving or line drawing to be copied is laid face downwards upon a perfectly flat surface, the sensitive or bromide paper is laid film side downwards upon it, and a sheet of glass placed over all. A yellowish light is then held over the glass, the exposure being made through the glass and the sensitive paper. From three to ten minutes may be necessary in yellow light, according to the sensitiveness of the paper; with white light the exposure is much shorter. The developer recommended for this work is:

Hydroquinone	30 grains
Sodium sulphite.....	120 grains
Sodium carbonate.....	240 grains
Water	10 ounces

"Development is continued until the image appears to be buried. Having obtained a negative in this way, prints may be obtained from it by contact printing. The method has the advantage of giving a direct copy, a paper negative, of the same size as the original, and, of course, without using a camera. The clearer and more contrasty the original drawing or engraving the better will be the copy on the bromide paper, but should the latter be faulty, it may be intensified, reduced or cleared. The process was modified somewhat in 1900, when a sheet of green glass was laid over the paper and the exposure, of from five to ten minutes, made through that."

I have tried it out with what I must confess is only reasonable success. It is quite easy to get a copy or print in this way that can be read, but the amount of general fog-giness has, in my hands at least, left it worthless for any purpose other than pure record.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Improving By Enlarging

One of our correspondents says he understands that under-exposing and using a strong developer will increase contrast, and the opposite procedure give soft or flat results, but wants to know about how far he can go in these two directions. He, of course, must understand that there is but one normal exposure for a certain negative in front of a certain light, making a definite size enlargement on a particular brand of paper. Knowing what that correct normal exposure is, an exposure that will reproduce the quality of the negative in the enlargement, he can then calculate for more or less departure therefrom in order to get more desirable results. About the extreme in the way of increasing the contrast from a soft negative is to give one-half of the normal exposure and use the developer four times the normal strength. Even this will not give all that one could ask, but it can well be considered the limit of available remedy in this direction. Two-thirds normal exposure and a double strength developer can generally be depended upon to do all that is possible. If such procedure does not give the desired result, one can well conclude that the negative is a hopeless one. That is, of course, if one is using the particular bromide paper available that assures improvement in the same direction. To secure a soft print from an over-harsh negative, expose four times normal and dilute the developer sixteen times. This also is the extreme, and one should bear in mind that not only should the developer be diluted by more sulphite added, the latter being required in proportion to the total bulk of the developer and not to the other ingredients. Again, this last represents the extreme, three times exposure, and diluting the developer eight times can really be considered a good workable limit, while doubling the exposure and diluting the developer to one-fourth its normal strength will produce about all the improvement that really brings one to a print

that is satisfactory. Where the longer exposures mentioned are needed in combination with the greatly diluted developer, the prints will be quite soft, but they will greatly lack the quality of a print from a negative more normal in its quality.

Stripping Gelatine Dry Plates

A communication from the Research Laboratory of the Eastman Kodak Company is likely to prove of much value where the removal of the film for any purpose is required. The formulæ for film stripping are innumerable; and each worker claims success with his own without being able to insure it to those who follow the advice given. The procedure advised by the Eastman Company seems to give uniformly good results. It reads:

"It is frequently desirable to strip the films from gelatine dry-plates in order to apply them to other pieces of glass, and especially to place several negatives in juxtaposition upon the same piece of glass for printing.

"After experiments with different methods and formulæ the following has been found to be easily worked and to produce quite satisfactory results:

Sodium fluoride, 4 per cent. solution...2 parts
Formaline (40 per cent. formalde-

hyde)1 part

"The portion of film to be stripped is first cut around with a knife. The solution of fluoride and formaline may be flowed over the plate or applied with a camel's-hair brush to the portion of film to be stripped. The film will become loosened from the glass in about one minute, and may then be easily lifted by applying over it a piece of dampened paper, lifting carefully one corner and stripping the paper and film away together.

"If reversal of the film is required it is easily transferred to a second piece of paper, and from that to the final support.

"The glass on which the film is to be laid should be perfectly clean and flowed with a five per cent. solution of gum arabic. A little

glycerine added to the gum solution tends to improve the condition of the stripped film, which otherwise becomes rather over-dry and horny, owing to the formaline.

"With small portions of film there is very little danger of distortion or tearing, but if the plate is first bathed for ten minutes in formaline before applying the stripping solution, the film will strip equally well, and is tougher and less liable to distortion.

"When stripping large films the plate may first be flowed with:

Collodion15 parts

Glycerine 1 part

and as soon as the collodion film has become set, flowed or immersed in the fluoride-formaline solution; the time required for loosening the film may be slightly longer, but this method gives a tough, rubbery film, considerably stronger than film stripped without the collodion coating.

"The fluoride-formaline formula may be used to strip a dry-plate negative which has been coated with a thin rubber solution, and then with the collodion and glycerine solution; this gives a film which has extreme tensile strength, is tough and flexible, and resists a shearing tear fairly well. The time required to loosen from the glass is much longer, but this objectionable feature may be, in a measure, overcome by the addition of two cubic centimeters hydrochloric acid to one litre of stripping solution ten minims to ten ounces. The acid should not be added until ready to use, and the plate with the loosened film should be thoroughly rinsed to remove all traces of acid."

Supplementary Lenses

A New York subscriber wishes to know how he should calculate the focal length of supplementary lenses to be used with his seven-inch lens in order to secure focal lengths of five and nine inches, approximately. To change the focal length of a seven-inch lens to five inches, multiply the two lengths together, making thirty-five. Then subtract the shorter from the longer length, getting two. Finally, divide thirty-five by two, and the result, seventeen and one-half, is the focal length of the supplementary convex or positive lens that must be added to secure a focal length of five inches. To lengthen the seven-inch focus to nine inches will require, this time, a concave or negative lens, the focus of which is determined in the same

way. Multiplying seven by nine we secure sixty-three, and this divided by the difference of the two focal lengths, or two, gives thirty-one and one-half inches. Our correspondent therefore requires a convex spectacle lens of seventeen and one-half and thirty-one and one-half inches to respectively shorten and lengthen the focus of his seven lens to five and to nine inches.

The Strength of Acetic Acid

As we look over formulas for acid fixing baths, we find that some call for glacial acetic acid, others for acetic acid No. 8, and still others specify simply acetic acid. The ordinary commercial grade known as No. 8, is known to the trade as No. 5 acid acetic diluted and is most generally about twenty-eight to thirty per cent strong. This is the grade generally understood when the glacial is not specified, and, while it is the grade usually carried, one may be supplied with some other grade if care is not used. The different grades usually sold are as follows, and one can see that there is a wide variation in their respective strength:

	Per Cent
No. 1. Acetic acid.....	99.5
No. 2. Glacial acetic acid...	96
No. 3. Acid acetic.....	90
No. 4. Acid acetic.....	36
No. 5. Acid acetic, diluted..	30

This last, as we have explained, is usually called No. 8 and is also known as "Commercial" acetic acid.

Lacquering Brass

One of our correspondents wants to know if it is practical for him to lacquer some brass fittings and the like that tarnish very rapidly with the naked metal exposed to the air. The work is not at all difficult if a little care is exercised. The article should be well polished, preferably with a buffer wheel on a lathe. Dust and dirt must be avoided and any trace of grease on the surface must be removed. Heat over the flame of an alcohol lamp or Bunsen burner until just a little too warm to be held comfortably in the hand, when the lacquer should be applied with a fairly broad camel's-hair brush. Any paint store will supply a light yellow or colorless lacquer suitable for the purpose. Use quick, light strokes and put on as evenly as possible while the article is still warm. If a thick coating is desired, two or even three coats may be applied.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Room 237, Union Depot, Denver, Colo.

J. H. Winchell, Chief Album Director, R. F. D. No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Call Building, San Francisco.

Charles M. Smythe, Director Post Card Division, 1160 Detroit St., Denver, Colo.

NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

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NOTE.—All stereoscopic slides sent to Director for the circulating sets must be mounted, titled, and show the maker's name and I. P. A. number on the back of mount. Notify the Director how many mounts can be used, and a supply will be sent you by return mail.

George E. Moulthroppe, Director Lantern Slide Division, Bristol, Conn.

Edward B. Cowles, Secretary Lantern Slide Division, 11 Oak St., Bristol, Conn.

STATE SECRETARIES.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

California—A. E. Davies, 894 55th St., Oakland.

Idaho—Eugene Clifford, Weippe.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Missouri—J. F. Peters, Room 210, Union Station, St. Louis.

New York—Louis R. Murray, 21 Clark St., Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, Roby.

Wisconsin—F. W. Freitag, 500 Monument Square, Racine.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

NEW MEMBERS

4185—William J. Clark, 824 South 7th St., Lyons, Iowa.

5x7 or smaller, developing papers, of Mississippi River and Lincoln Highway views, etc.; for river scenes, bridges, landscapes, or anything of general interest. Class 1.

4186—A. E. Molando, Church St., Canaan, Conn.

Post cards, 4x5 and 5x7, various papers, of nudes and figure studies; for nudes and figure studies only. Good work only; copies not accepted. Class 1.

4187X—Lawrence McClelland, Anamoose, N. D. Class 2.

4188—J. N. Thompson, 703 N. Wilhite St., Cleburne, Texas.

5x7 and smaller, various papers, of local scenery and general views; for miscellaneous landscapes, and interior views. Post cards only. Class 1.

4189—J. S. Ross, P. O. Box 307, Moncton, N. B., Canada. Class 3.

4190—Harold A. Smith, P. O. Box 50, Sparks, Nev.

3¼x5½, various papers, of landscapes and street scenes; for landscapes and sea views or any good view pictures. Class 1.

4191—Anna Dowell, Mercer, Ore. Class 2.

4192—Margaret S. Hitchcock, R. F. D. No. 2, Morristown, N. J. Class 3.

4193—Sergt. Wm. H. Smith, U. S. Army, 1221 Roosevelt Ave., Flint, Mich.

3¼x5½ and 5x7, various papers, of Texas Missions, military scenes, landscapes and marines; for California Missions, mountains, snow, landscape and marines. Class 1.

4194—M. E. Gants, 1001 W. Main St., Newton, Iowa. Class 2.

4195—Oscar Hund, Saltsburg, Pa. Class 2.

4196—Miss Alice Jensen, Box 56, Hagerman, Idaho.

3¼x5½, developing paper, of Idaho scenery and general work, for good scenery, child, animal and flower studies, draped and semi-nude figures and subjects of artistic merit. Unmounted prints only. Class 1.

RENEWALS

150—J. C. Shinkle, Woodland, Cal.

Old Missions and general views; for old Missions and anything interesting. Class 1.

1895X—Arthur L. Burgess, 227 N. 20th St., Columbus, Ohio.

Post cards, developing papers, of a good assortment of Ohio, Michigan views, scenery, lakes, cloud views with filter, places of interest; for foreign views, mountain scenery, Yellowstone and Yosemite Valley. Now will be able to exchange with a limited number. Only good work desired and sent. Class 1.

3820—W. S. Cotton, 6329 67th St., S. E., Portland, Ore.

Unmounted stereo prints and a few lantern slides; for the same. Class 1.

4011—Louis H. Smith, Chichagof, Alaska.

From 2¼x3¼ to 8x10, developing papers, of views and nature; for the same. Class 1.

4047—Ralph Tuttle, Pomeroy, Wash.

5x7, 4x6 and other sizes, various papers, also lantern slides, of Snake River Bluffs, general landscapes and harvest scenes; for views of either of the California Expositions, marines, child and draped studies. I have worked in a studio and can do good work. I invite correspondence. Class 1.

4132—C. S. Carlsmith, Hilo, T. H.

3¼x5½ and 4x5, developing papers, of scenes of forest and seashore, Volcano of Kilauea, types of natives and orientals; for forest, river, lake, roadside scenes and landmarks. Class 1.

4156—Thos. P. Mason, 3110 Dunham Ave., Kansas City, Mo.

3¼x4¼, developing papers, of pretty churches; for same of churches, temples, cathedrals, pagodas, monasteries, wayside shrines or any other places of worship, either Christian or otherwise, just so the picture value is there. Extreme size and archi-

CAMERA CRAFT

tectural magnificence not any more welcome than simple rustic beauty and picturesque-ness. City or country, United States or foreign, big or little, all that is required is that there be an attractive picture; while no botch work will be accepted, I am not expecting or offering prints of professional quality. Hope to hear from the amateurs who make special collections in different lines. Class 1.

CHANGES OF ADDRESS

2717—W. N. Bird, Lock Box 82, Floral Park, N. Y.
(Was Vineland, N. J.)

3905—Hans Bothe, 2433 Sacramento St., San Francisco, Cal.
(Was 3901 22d St.)
3133—A. E. Davies, 894 55th St., Oakland, Cal.
(Was 2954 Linden Ave., Berkeley, Cal.)
4089—Alfred G. Pagett, care Commercial Pacific Cable Co., Honolulu, T. H.
(Was Midway Islands.)
4092—O. F. Smith, Greenleaf, Idaho.
(Was Ames, Iowa.)
4152—Thomas J. Bones, 127 27th St., Los Angeles, Cal.
(Was Elephant Butte, N. M.)
Oakland—A. E. Davies, 894 55th Street, Oakland.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Southern California Camera Club

This growing club of enthusiastic amateurs of Los Angeles is now occupying the fourth floor of the Lyceum Theatre Building in that city, and desires to keep on file for the benefit of its rapidly growing membership and visitors, files of catalogues, trade publications and like announcements that will be of interest. All such should be addressed to W. C. Sawyer, Chairman, Library Committee, 626 South Hope Street, Los Angeles, California.

A Change Made

C. A. Gwynn has recently sold his interest in the Arthur Spaulding Company, of 625 Eddy Street, this city, to his former associate in the business, C. S. Nordell. Mr. Gwynn contemplates returning to his original work of portrait photography, and to that end is equipping a very neat and attractive studio on Sutter Street. Mr. Nordell will continue to give the commercial business the same careful attention that has always characterized the work of the Arthur Spaulding Company and which has been responsible for the handsome patronage which the firm has enjoyed.

Fotocraft Annual Exhibition

"The Fotocraft" announces its Annual Exhibition, which will open May fifteenth and close May twenty-seventh, this exhibition to consist of original works in Photography and Painting. Work must be sent, 164

prepaid, to "The Fotocraft," care of Public Library, Bangor, Maine, on or before May fifth. No exhibitor may submit more than twelve pictures and all entry forms should be sent to Alice G. Welch, Secretary, 125 Essex Street, Bangor, Maine, not later than May first. All pictures must be framed, either with or without glass, and plainly marked on one of the entry cards that will be gladly furnished upon application to the secretary.

Every work entered will be submitted to the jury; pictures from out-of-town exhibitors will be returned promptly on close of exhibition; and the management will use all reasonable care to prevent loss or damage to pictures in its charge but will not be responsible for such occurrence.

Eleventh Annual Wanamaker Exhibition

The catalogue of the Eleventh Annual Exhibition of photographs held at John Wanamaker's, Philadelphia, is quite a bulky little booklet, showing that over fourteen hundred prints were hung, the work of over three hundred individual exhibitors. The first prize of one hundred dollars went to Charles B. Keeler, Cedar Rapids, Iowa; the second of fifty dollars to Charles O. Haimovitz, Philadelphia, and the third of twenty-five dollars to Williamina Parrish, St. Louis. In addition, there were five prizes of ten dollars each, and ten of five dollars, with not a few honorable mentions. Speaking of the competition, Mr. Stieglitz, one of the judges, said: "The judges had no great

CLUB NEWS AND NOTES

difficulty in selecting the prize pictures from the fourteen hundred photographs submitted to them, in spite of the fact that they were unusually strict this year, and that the standard required for acceptance for mentioning was higher. Imitation paintings and manipulated prints were unanimously condemned by the judges." We regret finding so few of our California or Pacific Coast workers represented in this exhibition, and trust that this will not be the case another year.

The Brooklyn Exhibition

The twenty-sixth annual exhibition of the Department of Photography of the Brooklyn Institute of Arts and Sciences will open on Thursday evening, April twenty-seventh, and remain on view until May twenty-first. The Department is fortunate in having been able to secure the Tissot Gallery of the Brooklyn Museum, a more central location than has been possible in the past. As there is ample room this year it has been decided to make this a noteworthy anniversary; and, breaking with former custom, give this exhibition the character of a review of the work that has been done by the Studio and Department members. It is felt that this will give the public a better idea of the really excellent and serious work that is being done in Brooklyn. In addition, the Department will make this an opportunity to return many past courtesies by inviting exhibits from some well known photographic workers who are not members. Department members will be limited to the hanging of six pictures, and invited exhibitors, non-members, to three. To assure uniformity of presentation and unity in the exhibition, the pictures are to be mounted on standard size mounts of a uniform light tone, and shown under glass without frames.

As there are a number of workers of marked individuality in the Department, a strong and interesting exhibition is assured, as this group of workers has suffered in the past from a lack of opportunity to show their work to other than a limited circle. Despite this handicap, the Department has sent group exhibits to most of the prominent shows in Europe and the United States. The exhibition will doubtless show forth a number of new workers, and should serve to attract outsiders to membership in that remarkable organization, The Brooklyn Institute.

Pittsburg Salon

A press and private view on Wednesday evening, March first, marked the opening of the third annual Pittsburg Salon of National Photographic Art in the galleries of Carnegie Institute. In presenting this exhibition to the people the members of the Photographic Section Academy of Science and Art must feel a well-merited sense of satisfaction, and to them is due the fullest measure of credit for bringing to Pittsburg a yearly exhibit of such character and scope. It is a matter of no small importance that added to the fame which has been secured to Pittsburg as an art centre through its great yearly display of paintings—there should be added an annual salon such as is not enjoyed by any other city in the country of another art now risen to its well-merited heights and universal recognition. Any visitor to the third Pittsburg Salon will go away requiring no further reason for the fact that pictorial photography is now firmly established amongst the higher arts and the camera a fully recognized medium of individual artistic expression. However could it be possible to convey to the visitor the mediums and methods so numerous employed by the artist—the difficulties in overcoming the camera's limitations and the fact that the camera, after all, is only a small basis for the creating of a true picture, a vastly clearer and greater appreciation would be secured to the art. The third salon, and this is equally true of the previous two, brings together pictures representing the work of the foremost photography artists in the United States, names that are classic in pictorial photography. Of some five hundred and seventy-five pictures entered, the committee of selection consisting of Chas. I. Berg, of New York; George Alexander, of Chicago, and Samuel A. Martin, of Pittsburg, accepted two hundred and ninety-nine. Hardly any phase of existence has escaped the seeker after pictures. One may delight in the portrayal of shimmering sun light, in the glory of midsummer or of winter with landscape stark and drear. The pictures this year comprise a wholeness that is altogether to be desired when one sees the high order of their appeal. There is no overstriving for the unusual, the fantastic or the bizarre, but rather is there a world of poetry in the prints and much that is an appeal to the emotions.—*The Index*.

NOTES AND COMMENT

**A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest**

Reported by William Wolff

The craft would like to know if Harold A. Parker, of Pasadena, knows a mushroom when he sees it.

Mr. O'Neil, of the Central Dry Plate Company, was a recent visitor in Los Angeles.

Fred Hartsook has added another studio to his string, Bakersfield being the location.

Frank Aston, of San Luis, still likes peanuts.

Tony Babb, of Howland & Dewey Company, is looking as cheerful as ever.

C. F. Kohler, of Los Angeles, is giving up his Main Street store and moving to his big Broadway studio.

Al Hennerl now has twelve camera men to look after at the "Flying A" at Santa Barbara. Some job.

H. E. Burns, the genial Kodak buyer of the Sun Drug Company, Los Angeles, has a four-year-old son who can take better pictures than his dad with a 2A Brownie.

Hugh Trout, of Salinas has a new ear.

W. H. Sherer and C. L. Adeyotte, of Santa Cruz, are two photographers that are not worrying about the chemical question. Why?

H. Sackrider, of Marysville, was in San Francisco during February.

The sale of Probus has taken quite a spurt in the East. The factory is now working overtime.

The Light For Portraiture

Those of our readers interested in portrait work, either studio or home, should write the Cooper-Hewitt Electric Company, Eighth and Grand Streets, Hoboken, New Jersey, for a copy of their new brochure, "Portrait Lighting With Mercury Vapor Lamps," by the Gerhard Sisters. Not only are the illustrations of exceptionally fine quality but the text, as a record of the actual experience of workers who have achieved success and find so much to commend in the Mercury Vapor Lamps, should have much of interest for all

who aspire to better work and wider capabilities. Do not neglect to send for a copy of this booklet before the supply is exhausted.

The Thirty-Sixth National Convention

The Photographers' Association of America will hold its annual convention at Wigmore Coliseum, Cleveland, Ohio, the week of July twenty-fourth. This will be a practical convention, full of business from beginning to end. There will be an exhibit of pictures for which every member of the Association is not only invited but expected to send prints. Rating cards with criticisms will be mailed to each exhibitor after the Convention.

Professor Edward Lake, Instructor of Art at the University of Illinois, will lecture on "Art Principles as Applied to Photography"; L. B. Jones, of the Eastman Kodak Company, will lecture on "Studio Advertising"; Tim Thrift, of the Multigraph Company, will give his lecture on "Direct by Mail Advertising"; C. H. Claudy will use for his subject "The Photographer as a Business Man," and Anderson Pace, of the Produce Terminal Exchange, Chicago, will talk on "Personality in Business."

The commercial photographers will be given special attention. W. H. Bass, a successful commercial photographer of Indianapolis, will give them a talk on "Building a Business." There will also be a Query Box and symposium led by "Billy Sunday" Agler.

Formal demonstrations will be given by Miss Pearl Grace Lochr, of New York City, and Edward H. Weston, of Tropic, California. Clifford Norton has kindly consented to make some sittings in one of the Cleveland parks some afternoon during the Convention. Mr. Heiser, a successful commercial photographer, will give a demonstration on handling objects that are particularly difficult to photograph, and one hour each morning will be spent under the light with three or four of the best known and most successful camera men.

NOTES AND COMMENT

An expert background worker and colorist will be kept busy; receptionists will show how to sell pictures, how to show proofs and increase orders, and the manufacturers and dealers have never had such facilities for making an impressive show as at the Coliseum, and the social features will not be forgotten.

This is a condensed outline of what the Executive Board has planned, as reported by L. A. Dozer, President, who advises that more detailed information will follow.

Novel Electric Lamp

The Edison Swan Company are putting on the market a new lamp that ought to have many valuable uses in photography and microphotography. It consists of tungsten filament so arranged as to give rise to an arc light enclosed in a globe of nitrogen. According to a paper read at the Institution of Electrical Engineers by Messrs. Gininghan and Mullen, it is possible in this way to have a four-inch bulb producing a five-hundred candle power luminosity, and of an efficiency of half a watt or more. The new lamp is called Pointolite.

Hydrochinone Formula

Several of our local commercial men are much pleased with the results secured from the hydrochinone formula given below, one which we believe originated with the Eastman Kodak Company. These workers find that it gives the best of results; and, now that Metol and its substitutes are either unobtainable or almost prohibitive in price, it should prove of interest to all. The formula reads:

Water	30	ounces
Hydrochinone	100	grains
E. K. sulphite of soda.....	200	grains
E. K. carbonate of soda....	3½	ounces

For Artura Iris add one drop of a saturated solution of bromide of potassium to each ounce of the above developer. For all other of the Eastman developing and bromide papers, add one drop of a saturated solution of bromide of potassium to each three ounces of developer.

We believe it should be borne in mind that the given quantities of bromide of potassium are only suggestive, as experience seems to indicate that the amount required in a measure depends upon the water in each location. Using the above developer

for Artura and Velox, the image makes its appearance somewhat as if the prints were overtuned, but as development proceeds, it clears and builds up nicely. It should be used at a temperature of from sixty-eight to seventy degrees.

Another formula that we believe originated from the same source and that, like the above, does not require Elon, Metol or its substitutes, is meeting with unqualified success for tank use in developing plates and films. It reads:

Water	10	gallons
Sodium bisulphite	170	grains
Hydrochinone	2	ounces
E. K. sulphite of soda.	12	ounces
Pyro	2	ounces
E. K. carbonate of soda	6	ounces
Potassium bromide...	65	grains

This is found to have good keeping quality and to be lacking in the shortcomings of straight pyro developer when used in a deep tank such as are generally employed for films.

Felix Raymer Earning Renown

The Sunday edition, February twenty-seventh, of the *Austin American* devotes nearly a page to an interview with Professor Felix Raymer, of that city, Secretary of the Professional Photographers' Association of Texas. The article is illustrated with ten beautiful reproductions of a like number of poses by Miss Fern Byas, of Austin, and a picture of Professor Raymer himself. While the pictures are all of the finest quality, a different pose and expression characterizes each, the moral being that present day photography demands more than the mere placing of the subject before the camera, adjusting a satisfactory lighting and then exposing the plate. Interesting as are the pictures the article is even more so, being in Professor Raymer's well known brisk and entertaining style.

Clouds And Their Lining

If you wish to see a fine piece of advertising literature, one that contains a fine picture of our foremost apostle of peace, together with some equally fine portraits of charming ladies and interesting children, write the James H. Smith & Sons' Company, 3541 Cottage Grove Avenue, Chicago, for a copy of their new "Cloud With a Silver Lining" booklet. The pictures are all by

well known photographers who use the Victor Studio Flash Cabinet and the text tells one fully just what can be done with and what can be expected from the same equipment. Advantages, cost of operating, and comparisons with other systems of artificial lighting are discussed in an effective and understandable manner. Send for a copy now, today, before it is forgotten.

Ammonia And Its Forms

Ammonia is a gas usually sold as a thirty-three per cent solution having a specific gravity of .880 and known as stronger ammonia. Ammonium citrate is not always obtainable but can be made by dissolving one ounce of citric acid in four ounces of water and then adding ammonium until neutral. Make to ten ounces and each ten minims will contain a grain of ammonium citrate. Ammonium bromide will not take the place of potassium bromide when the caustic or carbonate form of potash or soda are used as ammonia is liberated and this last causes fog. Ammonium carbonate should be dissolved only in cold water.

Citrates As Restrainers

In a recent article on the saving of bromide of potash in photography, the price of which has now become a matter of serious importance to professional photographers, the value of citrates as a restrainer is pointed out; and the writer further shows that not only may citrates be used in place of potassium bromide, but that in some ways they have a higher efficiency in that while potassium bromide only acts when placed in the developer before the appearance of the image, the potassium citrate may be used after the image has appeared without a loss of its restraining action. The quantity advised is five grains of citrate per ounce of developer. It is further suggested that when potassium citrate is kept in solution, a small quantity of salicylic acid will prevent the formation of molds.

Illinois College of Photography Notes

The past week the College received some samples of work from the Hillhouse Studio at Vicksburg, Mississippi. Both Mr. and Mrs. Hillhouse are students of 1912, and are now owners of the best studio in Vicksburg. They report a large December business.

C. C. Goulder, a former student, is now with the English field artillery in France,

having enlisted last spring as gunner with the Canadian forces. One of his brothers was killed last August during the storm on the Dardanelles, and two other brothers are now at the front in France.

The basketball team is still on the warpath. The most recent scalps to be added to their belt being those of the nearby towns of St. Elmo and Newton. The success of the "five" is due to continued practice and good teamwork.

Miss Katherine Collier, known in college circles as "Sunny," is now employed in the Hayes Studio at Detroit, Michigan. Her specialty, while attending the college, was home-portraiture.

H. R. Vant, who graduated last Spring, and who is now located at Waukegan, Illinois, writes that during the past month he received a contract for a large amount of high school work. Mr. Vant was one of the best workmen in his class.

Among the visitors the past month was Howard A. Bailey, of '13, en route to Chicago from the southern part of the State, where he has been working the last few months. He intends, in the near future, to engage in business for himself.

Notice has been received of the death of Mrs. Florence Allen, of Springfield, Illinois, on February seventeenth. She was a student of the college in 1912; and by those who knew her, she will long be remembered for her kindness and her charitable deeds.

The "Bissell College of Matrimony" is pleased to announce the marriage of Miss Alma Anderson, of 1908, to B. F. Kagay, Jr., a former Effingham real estate broker, and son of the Mayor, on December thirty-first. The couple will make their home in Petersburg, Virginia, where the groom is now in business.

As a means of increasing efficiency among the students, President Bissell inaugurated a test wherein each one was requested to hand in a schedule of their time for the week. The prize was awarded W. Thorne Henderson, star basket ball player, of West Liberty, Iowa, who divided the one hundred and sixty-eight hours of the week as follows: Sleep, sixty-five and a half hours; meals, twelve hours; college attendance and work, thirty-two and a half hours; recreation, thirty hours; study, twenty-five hours; religious services, three hours.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA

Enlarging thin and weak amateur negatives

Thin negatives worthy of being enlarged because full of human interest have heretofore found their way to the scrapheap. No enlarging paper on the market was capable of correcting the technical deficiency of such negatives, until the advent of

Contrast Enlarging Cyko

This grade of Enlarging Cyko is to enlargements as Contrast (Blue Label) Cyko is to contact prints—the saver of negatives otherwise unprintable.

AnSCO Company
Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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"CAN'T YOU GO FISHING?"
By HARRY F. BLANCHARD



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

MAY, 1916

No. 5

Photographs For Technical Magazines

By Harry F. Blanchard



With Illustrations by the Author

In my last article, in the March issue, I dealt with the kind of photographic illustrations that interested the editors of farm papers, Sunday-school papers and the advertising firms. In this article I will try to explain how one can meet the photographic wants of the technical magazines, and incidentally, the newspapers.

There are thousands of subjects of a mechanical nature or of news interest, which, if photographed and sent in to one of the daily papers in the larger cities or to one of the technical journals, or mechanical magazines, as they are sometimes called, would find a ready sale. They should, however, be accompanied by a short description of from one hundred and fifty to two hundred words, either attached to the pictures or written on the backs thereof.

In submitting photographic illustrations for such publications, it is always necessary to send a short story telling what the picture represents. If of a piece of machinery, tell what it is for and what it does; and it is advisable to give the name of the inventor, as this is sometimes required. Do not be afraid of telling too much about the picture, as the story can be cut down by the editor. Pictures of news value or of mechanical interest are valueless unless such a description of the pictured object is given. It has been my own experience that one should, if possible, write the description on the back of the print, as in this way there is no danger of its being lost unless the print goes also.

Photographs accepted and used by the technical magazines and newspapers are nearly always retouched to bring out any weak parts that are important.

CAMERA CRAFT

For that reason the background and subject of pictures sent to these particular publications do not necessarily have to be of the same good quality or as sharp and clear as those going to a farm paper. But, whenever possible, it is best to produce the very best work that one can, as it will find a much better chance of acceptance with the editor than will a poorly made print.

I remember one case in which I made a post card size print of a wrecked automobile and a deer that it had run into, and sent the small photograph to a newspaper, only to have it returned. I knew it failed of acceptance because in the picture the automobile and deer were quite small, so I got busy and made an 8x10 enlargement, and, sending the very same photograph to the same paper, it was accepted and I received a check by return mail. This goes to show that the large, clear print stands the best chance of being accepted for publication. I have found that the 5x7 print is about the right size for most publications when the picture is to be used on one of the inside pages, while an 8x10 is best when intended for the outside cover or as a frontispiece just inside the cover.

The illustrations reproduced herewith are shown as examples of the kind of pictures the newspapers can use and the kind that the technical journals want, as all of them have been sold to several different kinds of publications. As shown, some photographs will answer two purposes; that is, they will fit well as illustrations for two different kinds of publications. For example, the illustration of the Concrete Winding Stairway was published in both the *New York*



WATER WHEEL.—Cloudy day, Cramer Crown plate, f-16, one second exposure.

PHOTOGRAPHS FOR TECHNICAL MAGAZINES



ROOSTER CROWING—Heavy cloudy day, Graflex camera, Graflex plate, f-6.3, one one-hundredth and tenth second exposure



COW NURSING LAMBS—Bright light, Cramer Crown plate, f-8, one-fiftieth second exposure

Herald and in *Popular Mechanics* of Chicago, as was also the picture of the Old Water Wheel at Troy, New York. These two pictures represented news value and at the same time they were of interest to the reader of technical magazines. Lots of magazines and newspapers want interesting pictures of historical places and buildings, and here we have a chance to dispose of photographs like the one of historic Fort Ticonderoga, both before it was restored and after it was made the same as before the war. This particular kind of photograph will find a ready market in several different kinds of publications. The illustration of the sewing machine can hardly be used as a news picture, but it found a ready market with the mechanical magazines. It was a big seller; and as these magazines hardly ever ask for the exclusive use of a picture, one can sell duplicate prints to several of the journals and in that way secure a tidy revenue from pictures of good subjects.

This giant water wheel was built at Troy, New York, by Henry Burden in 1838. It is sixty feet in diameter and developed twelve hundred horsepower. It was in continuous use until 1890, supplying the motive power for a large plant. The old wheel represents a type now nearly obsolete. Sold to *Popular Mechanics* and *New York Herald*.

As I live in a city, and country life is always of interest to me, I can hardly keep away from making farm pictures. The one of the Rooster crowing, made with a Graflex camera on a heavily clouded day, I sold to a newspaper together with story as to how it was secured. As the reader perhaps knows, it is almost impossible to make a photograph of a rooster crowing, using a camera on a tripod. When one gets the slide drawn, the rooster walks out of focus if not entirely out of the view, and this means another trial to get him in focus again. But with the reflecting type of camera it is different, as one can follow the bird until he crows, then push the button, and the picture is secured. The cow nursing the lambs is another farm picture, but it was of enough news value to be used in the *New York Herald* and in several other papers of a similar nature. Both these last two pictures were also published in farm papers, so one can see that he must keep thinking all the while so as not to overlook any possible chance of a sale. The illustrations with this article are all photographs which I made myself and actually sold. With each are given the conditions under which the picture was made, and these I trust will be a help to others interested in the same kind of work.

The photograph of a cow nursing lambs was made on an Adirondack farm. The mother of the lambs died when they were quite young and the old cow nursed and cared for the little motherless lambs until they could look after themselves. This picture was sold to Grit Publishing Company, *New York Herald* and a farm paper.

Old Fort Ticonderoga as it appears today after being restored by H. P. Pell, of New York, at an expense of five hundred thousand dollars. This restoration included the rebuilding of the tunnels and fort grounds as well as the fort itself. Sold to *Christian Science Monitor* and Underwood & Underwood, New York.

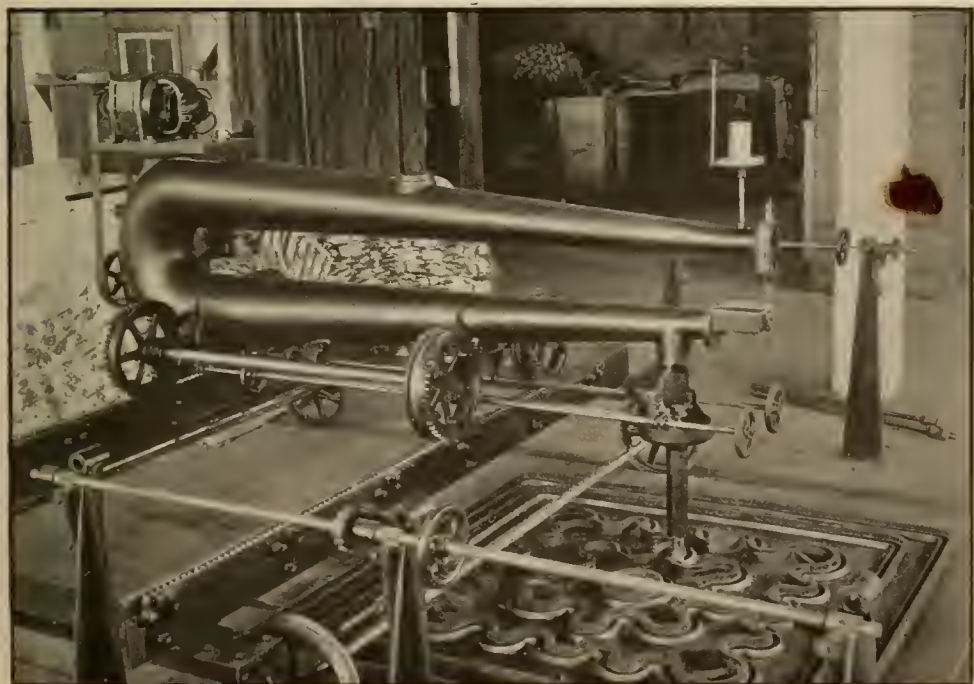
PHOTOGRAPHS FOR TECHNICAL MAGAZINES



FORT TICONDEROGA—Restored, bright sun, Cramer Crown plate, f-64, four seconds exposure. Ruins, bright sun, Seed Gilt Edge plate, f-16, one-fiftieth second exposure.

The companion picture shows historic Fort Ticonderoga as it appeared before being restored. Those of our readers who have read the story of the Green Mountain boys will recall how, led by Ethan Allen, they marched to the fort and commanded it to surrender in the name of the Great Jehovah and the Continental Congress.

The sewing machine is one that seemingly works with the intelligence of a human being. It is used for sewing comforters and is so arranged that the cogged design, when fastened to the base of the machine, acts as guide for the arm which reaches and connects with the cogged wheel at its end. When the electricity is turned on, the whole machine follows the cogged design and sews the pattern in the comforter so minutely correct that the needle does not tear even the finest grade of China silk. This machine is used by the Standard



SEWING MACHINE—Bright light indoors, Cramer Crown plate, f-64, fifteen seconds exposure

Textile Company, of Glens Falls, New York, and was built and designed by Jay Sheldon, of that company. Photograph sold to *Popular Mechanics*.

This winding stairway is constructed of concrete reinforced with steel rods. The stairway, about forty feet high, contains fifty stairs that make two complete turns around the center shaft. This last is four feet six inches in diameter and was poured in one solid piece. The framework was made by A. L. George, of Glens Falls, and the stairway was poured by the Callanan & Prescott Company, of Albany. This stairway extends from the ground to the roadway of the one hundred and fifty thousand dollar viaduct bridge which spans the Hudson River from Glens Falls to South Glens Falls, New York, and leads the way to the famous Coopers Cave, mentioned in "The Last of the Mohicans." The ornament at the top of the shaft was also made of concrete. Sold to *Popular Mechanics*, *Technical World*, *New York Herald* and Grit Publishing Company.



WINDING STAIRWAY—Cloudy day, Speed film, f-64, eight seconds exposure

There is always a ready market for photographs such as these, and they bring good prices. One has but to keep his eyes open for anything in the picture line that has news value or technical interest. Doing this and using judgment in submitting the right pictures to the right editors, one can have the checks come rolling into his pockets within a few days after submitting the prints to the various publications.

Lastly, one should always make his photographs as clear and sharp as possible, as the neater an illustration appears, the better chance it will have.



Improved Vertical Enlarging Apparatus

By H. D'Arcy Power, M. D.



Several years ago I described in *CAMERA CRAFT* a new form of vertical enlarging apparatus that has not only evoked a great deal of attention, but, to my knowledge, has been employed to no small extent both commercially and in amateur practice. Since that date, various other forms have been suggested, and I notice in the *British Journal of Photography* of December seventeenth a note which very trenchantly describes the uses and drawbacks of this type of apparatus. It says, so far as present-day conditions are concerned, several very positive conveniences are attached to the vertical pattern of enlarger; the lamp, either electric or incandescent, is conveniently out of the way at the head of the apparatus; the elaborate negative stage can be replaced by a simple shelf with a hole in it, the easel becomes another upon which the sensitive paper lies flat, the horizontal position facilitates the proper use of bolting cloth or chiffon for any desired breaking up of the definition. Added to all this is the small floor space occupied, allowing of it being left standing ready for immediate use whenever required. It further points out that such apparatus has the drawback of running to a considerable height or alternatively of bringing the easel to a very inconvenient position near the floor, if enlargement is done upon a considerable scale of magnification. These complaints I shall show to have little validity in the case of the apparatus I am about to describe, a form of enlarger which is capable of doing, in the minimum time and with the least trouble, the following work:

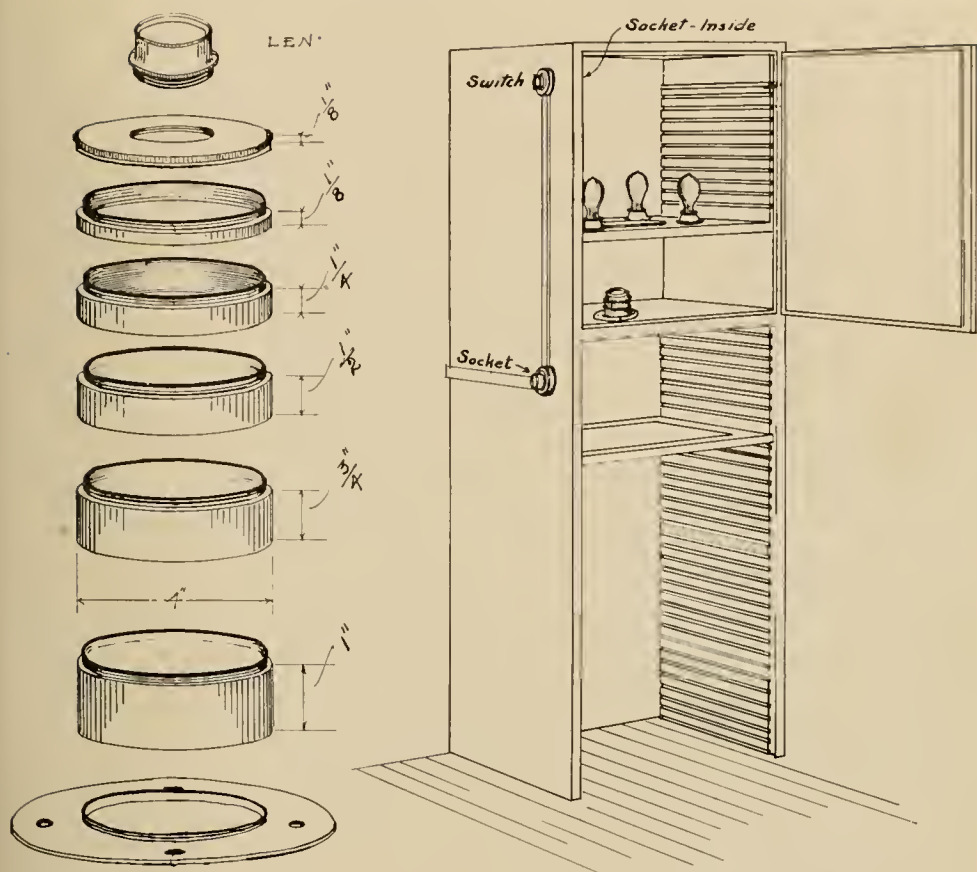
First, it will enlarge from one and one-half to seven times the original, or, conversely, it will reduce, either on paper, plates or lantern slides, to from one and one-half to one-seventh of the original. It will copy manuscript or pictures to scale with absolute equality of illumination and the greatest simplicity of handling. It can be used for the direct photography of small objects under almost any desired angle of light, and it has a special application for rapid reduction of X-ray plates to lantern slides or small print copies. All these varied procedures require no more time than is necessary to place a sheet of paper or a plate on one shelf and the object to be treated on another. No more mechanism is involved than that required in turning the illumination on and off, and the dark-room is robbed of no more space than that covered by the largest sheet of paper on which one desires to enlarge or the largest plate to be reduced. My own apparatus, with which I am constantly making enlargements up to 16x20 or reducing X-ray plates of a like size to lantern plate form, occupies a floor space of 18x22 inches, with a height of six feet, making it hardly noticeable as a part of my dark-room equipment.

The plan of the apparatus involves the construction of a cupboard-like cabinet, light-tight in its upper part and with its front closed, for about one-

third of the distance downward, with a light-tight door. The size will depend upon the maximum enlargement likely to be undertaken, 18x22 probably covering the requirements of most amateurs and professionals. This cabinet is divided into the following sections: An upper part containing the illuminating apparatus and a shelf to hold the negative, when enlarging, or a sensitive plate when reducing; a board at a somewhat lower level provided with an opening to receive the lens. From this point upward the door makes the space light-tight, leaving the remainder of the front open. This open section is provided with forty-eight grooves, one inch apart, these accommodating a movable shelf which can be slipped into any desired groove. In general enlarging work, the light in the upper portion is projected through the negative, and the image, formed by the lens underneath, is received on a sheet of bromide paper placed on the shelf in the lower section, this shelf being in the groove giving the desired size of enlargement. In making reductions, the arrangement is reversed; the illuminating apparatus is placed well down in the lower compartment and the image is transmitted by the lens to a sensitive plate contained in the enclosed upper portion of the cabinet. When the apparatus is used for copying, the illuminating apparatus is transferred to the upper instead of the lower grooves of the lower section, the image being projected upwards by the lens. The description here given will be readily understood by reference to the accompanying illustrations.

We will now proceed to deal in detail with the construction of the apparatus. The material should be well-seasoned redwood, as the heat generated by the illuminating apparatus is often considerable and redwood has the least tendency to warp under these conditions. For the cabinet, simple half-inch boarding, which need not be tongued and grooved, will answer, as it is desirable to make it light-tight by an outer covering of building paper. However, strict attention must be paid to the rabbets of the door that rays of light may not penetrate outwards into the room; and also the lower partition of the upper chamber, the one through which the lens projects, must be most carefully secured against light leakage. For all these purposes, my experience has been that brown building paper, carefully glued down, gives the most absolute protection. In the construction of the cabinet, particular attention must be paid to the absolute parallelism of the grooves in the lower part and to the perfect leveling of the two shelves in the upper section. Upon this depends the great advantage which this apparatus has over horizontal enlargers, in that deformity and lack of focus from the non-conformity of planes is completely eliminated. The upper compartment must have, at a distance sufficient to allow for the presence of the illuminating system, a shelf cut out in the center to receive a set of kits wherein to place the negatives to be enlarged or the plates on which reductions are to be made. This can be arranged to be movable to accommodate lenses of different foci. Below this, at a distance depending upon the focal length of the lens to be employed, must be the bottom of the section or compartment, having in its center a round or square hole for the accommodation of the lens or a small lens board carrying the lens.

IMPROVED VERTICAL ENLARGING APPARATUS



THE EXTENSION RINGS

THE ENLARGING CABINET

The illuminating system employed in my apparatus consists of four one hundred watt, concentrated filament, nitrogen bulbs, arranged on a square frame as shown in the illustrations. This can be inserted in any one of the grooves of the apparatus, either in the upper section to illuminate downwards for making enlargements, in the bottom of the lower section for illuminating upwards, to make reductions, or in the upper part of the lower section, pointing downwards, to illuminate objects to be copied. The mode of wiring is such that the four lights are simultaneously ignited by screwing the plug into the desired socket, one being located on the inside of the upper compartment and the other on the outside of the lower one, as shown in the sketch. With four lamps so arranged and the upper compartment lined with white blotting paper, an ordinary $3\frac{1}{4} \times 4\frac{1}{4}$ negative will give 14×17 enlargement with an average illumination time of twenty seconds, using stop f-8. The arrangement of lights here described could be modified to suit different requirements or conditions, but in my hands it has been perfectly satisfactory, permitting of a large amount of rather varied work at very small cost. The amount of heat generated in the comparatively small compartment of such an apparatus is quite considerable, and I avoid as much as possible the turning on of the illuminant for any longer time than is

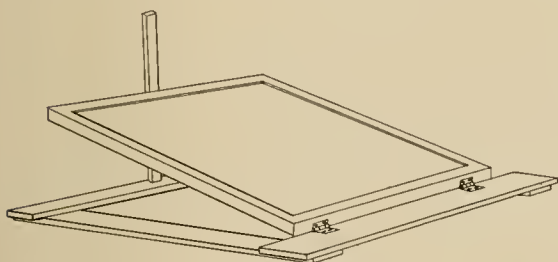
necessary for the exposure, throwing open the door when the lights are off. In a large plant such detail might be troublesome, and it would of course be advisable to ventilate the upper chamber in such a way that there would be no escape of light. When used for reducing or copying, owing to the shorter exposure time required, this heating is lessened.

The next question concerns the choice of a lens. The factor to be considered is that the longer the focus of the lens the greater must be the extension of the apparatus, while a too short focus may give insufficient covering power to permit of enlarging from large plates. The lens I employ is one of five inches focus, and I have never had trouble in either direction. The lens, fitted to its shelf, should be arranged at such a distance below the negative shelf that the greatest possible enlargement is in sharp focus on a piece of white paper placed on the lower shelf of the under compartment, using full aperture. In order to obtain enlargements of lesser magnification, it will be necessary to remove the lens further away from the negative. In my original apparatus, this shifting of the lens was avoided by the use of supplemental spectacle lenses to alter the focal length. Experience has convinced me that, however simple this may be, in practice imperfections of manufacture in spectacle lenses, and the ease with which the two centers may become displaced, make it more desirable to employ some means of varying the distance between the original lens and the negative, doing away with all supplemental forms. This could be achieved with a bellows extension or by using a focusing tube.

However, the method I employ, one that is extremely simple, quite inexpensive and perfectly satisfactory, is to have made a set of five rings of different lengths, namely, one-eighth, one-quarter, one-half, three-quarters and one inch. These screw one into the other, making a total length of two and five-eighths inches, and, when used separately or in combination, provide for twenty-one changes of focus, which are many more than are likely to be used. After having experimentally ascertained the required extension for a given enlargement, the same should be marked on the ring used. Better, have all plainly written on a little tablet on the door of the apparatus, giving also the number of the shelf groove corresponding to the extension ring for the required enlargement. It is a matter of but a few seconds to screw in place the ring giving the required enlargement before placing the lens in the apparatus. Thus, in my case, the five-inch lens alone gives me an enlargement of seven diameters on the lowest shelf. With a ring of one-eighth of an inch length, the enlargement is reduced to six diameters; screwing on the quarter of an inch, it is reduced to four; with three-quarters of an inch, to three; with an inch and one-half, to two; and with two inches, to one and one-half diameters. The great advantage of this lies in the fact that when the test has once been made, the smallest error in focusing is impossible and the making of an enlargement is a purely automatic procedure. These rings should be of sufficient diameter not to obstruct the expanding cone of light. Mine are four inches in diameter, fitting one into the other, the narrower one forming a collar that engages the lens. They are one-eighth, one-quarter, one-half, three-quarters and one inch in length, providing, by combination, for almost any requirement.

IMPROVED VERTICAL ENLARGING APPARATUS

Let us now consider the actual use of this apparatus for its four chief purposes. First, we desire to make an 11x14 enlargement from, let us say, a $3\frac{1}{4} \times 4\frac{1}{4}$ negative. Four and one-quarter inches into fourteen goes practically three times. We screw the lens into the ring marked three diameters, and place it in position. We next insert the sliding shelf in the groove of the lower compartment marked "X 3," and then place the negative in position in the upper compartment. A sheet of bromide paper is then placed on the shelf in the lower compartment, the light is turned on, and, in a few seconds, the paper can be removed to the developing tray, there having been no need to fasten it down, cover it with glass or otherwise manipulate it. If any dodging had been necessary, interposing a sheet of celluloid between the lens and the bromide paper would have rendered the work quite simple. Even complex, differential printing is easily achieved by putting a sheet of glass between the lens and the bromide paper and arranging thereon any set of cut-outs that may be desirable; or, if diffusion, such as is afforded by bolting cloth, is required, a frame on which the material is stretched may be slid into the grooves that bring it the distance



TILTING FRAME

<i>Lens - 5 inch focus.</i> (TURNED DOWN)		
<i>magnification or Reduction</i>	<i>Extension Tube (in Inches)</i>	<i>Shelf Number.</i>
2	2½	13
2½	2	14
2½	1¾	15
3	1½	16
3½	1¼	17
4	1	19
5	¾	24
6	½	31
<i>Lens - 5 inch focus - (Turned Up).</i>		
7	LENS ALONE	17
12	½	24

ENLARGING TABLE

above the paper that gives the desired effect. In fact, all manipulation for the modification of the image is reduced to the greatest simplicity.

Frequently, in making enlargements, the correction of distortion, sometimes unavoidable in the original negative, becomes desirable. The recent experience of visitors to the Panama-Pacific International Exposition, where, owing to the unjustifiable restrictions, the photographic public were not permitted to use tripods in perpetuating the beauties of that wonderful collection of buildings, is an example in point. A major portion of the exposures were made with hand cameras having no rising fronts or swing backs, making correct drawing impossible. However, were these same negatives properly handled in enlarging, the distortion would be entirely or in a greater part overcome. A little further along I will describe a frame that allows of the tilting of the bromide paper for correcting such distortion in the negative.

The copying of manuscripts, pictures, or other flat surfaces, can be carried out in this apparatus with the greatest facility. For this purpose, the frame bearing the lamps is removed from the upper section and inserted, the lights pointing downwards, into a groove of the lower division. The size of the object to be copied and the amount of reduction determine the position of the former. For example, we wish to copy a 10x12 drawing onto a lantern-slide plate. Four

inches will go into twelve three times, and we therefore place the drawing on the shelf marked " $\times 3$." To be quite sure that we have it exactly centered, we return the lights to the upper compartment, projecting the square of illumination onto the drawing, permitting it to be aligned to exactly occupy the desired position, as obviously, whatever relation it bears to the projected square of illumination, it will also bear to the lantern plate on which it is copied. The lamp frame is changed back from the upper to the lower cabinet, as described, the lantern-slide plate is placed on the negative frame in the upper compartment, the door closed and the illumination in the lower compartment turned on. Five seconds is usually sufficient for the copying of manuscripts and pictures onto a process or lantern-slide plate. As the light from the four lamps cross and mingle one with another, there is an entire absence of surface shadow and a perfect evenness of illumination. I have daily used this for several years and results are obtained rapidly and with absolute certainty. The same arrangement of lighting may be used for photographing small objects such as coins, flowers or other subjects having a not too great vertical extension. These may either be placed as was the drawing, immediately beneath the lens and illuminated from all four points, or, where a differential lighting is required to secure some effect of relief, two or three of the lamps may be unscrewed, causing the illumination to come from one direction only. Furthermore, as it is frequently desirable that the illumination fall at one angle and the ray of light entering the lens pass at another, I have found it expedient to construct a simple, home-made piece of apparatus, figured in the sketches herewith, that allows one to tilt the support carrying the object to be photographed, at an angle to the lens. The inclined portion can be either a sheet of glass or a colored paper surface according to the requirements of the user. The same apparatus can be used for tilting the bromide paper to the necessary angle for correcting distortion when making enlargements. This employment of the cabinet for the making of photographs of coins and medals has proven particularly useful, as it solves a problem much discussed in the photographic journals.

To use the apparatus as a reducing camera, one has only to reverse the position of negative and sensitive plate, bringing the illuminating apparatus to the bottom or nearly to the bottom of the lower compartment, in place of above. For example, we desire to reduce an 8x10 negative to lantern-slide size. We place the negative on the shelf for a " $\times 3$ " enlargement, only in this case the shelf is cut out in the center to admit kits wherein the negative rests. The illuminating apparatus is placed, not as in copying, above the object, but below, and a sheet of blotting paper is affixed immediately thereunder to act as a reflector. The image will then be projected into the upper cabinet, exactly centered on the lantern plate; when, with absolute certainty both as to position and accuracy of focusing, the necessary exposure can be made. This method is extremely valuable in the rapid production of lantern slides or small, glossy bromide prints from large X-ray plates. I commend it to the especial notice of professional photographers, who are being more and more called upon by the medical profession to provide, quickly and cheaply, reductions of their radiograms.

IMPROVED VERTICAL ENLARGING APPARATUS

I might, did space permit, cover various other points connected with the use of this apparatus, and I will be most happy to give further details should any difficulty arise in the application of the information here given. I have used this apparatus for some seven or eight years, and each day has added to my conviction that it is the most satisfactory that has hitherto been proposed for accomplishing a variety of work in the minimum time. Finally, I would draw attention to the possibility of using other than the lens suggested, although it will probably be found that from four to six inches focus covers the range of convenient action for most dark-rooms. Any table of enlargements will give the indications for arranging the position of negative shelf and lens board for other than the five-inch lens. I would, however, advise the maker of an apparatus such as I have described to delay making final adjustments until practical tests have confirmed the theoretical findings. The best means for verifying adjustments is to expose a process plate on a sheet of printed matter made up of varied type sizes, developing it for clear lines and a hard, black background. This can later be used as a test negative to be projected for sharp focusing where required.

For a photograph to be artistic, it is requisite that it should be made by one who has artistic impulses, and is guided by artistic principles. There is no short cut to proficiency, and no one can teach another to make a picture, or even to shoot straight, for, when all has been said, much depends in the last resort on the ability and temperament of the individual. But what may be done is to facilitate his task by arming him with principles to guard him from error, by showing him examples that should stimulate his emulation, and by offering him suggestions that may point the way to unsuspected delight. Such is my main purpose in preparing this book. The principles that I have set forth are not to be taken as representing any particular "school"; they are those that have become established in my mind as the result of a critical examination of modern art, and a habitual observation of Nature, and while I venture to think that they are in accord with the art-spirit of the day, it has also seemed to me that they are particularly applicable to the needs of photography.—ANTONY GUEST.



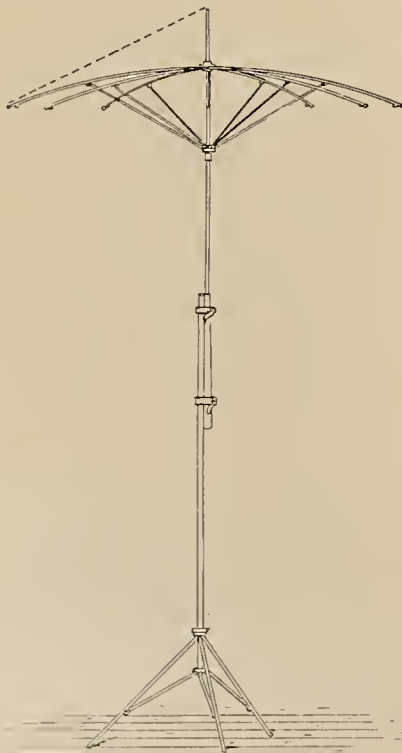
An Efficient Flash Bag

By W. W. Irvine



With Illustrations by the Author

Being one of those unfortunate human beings with "a champagne appetite and a beer pocketbook," it has been my lot through life to be compelled to get along without many little luxuries and conveniences, or be content with what I could manufacture for myself. My photographic hobby could never have been ridden very hard had it not been for the helpful hints and articles, picked up in the photographic magazines, which have enabled me to economize by making for myself many of the things I could not afford to purchase. Not having run across directions for making a flash bag of any kind, the following is submitted



as covering one that is simple, cheap and effective. I have fired as high as one hundred and fifty grains of powder in mine.

The materials needed are: An old umbrella frame, about six yards of bleached muslin, close woven to retain the smoke, and a roll of half-inch tape.

AN EFFICIENT FLASH BAG

If a stand is desired, add a portable background carrier and two short straps, with buckles, such as are found in the top and bottom of a suitcase.

The drawing herewith is almost self-explanatory, but to make clear any point not understood, the procedure is as follows: First, measure the distance from your umbrella tip to the end of one of the ribs, as shown by dotted line in the sketch. Using this as the radius, with a piece of string and a pencil, inscribe a circle on the muslin and cut out on the line. If yard-wide goods is being used, it will be necessary to sew two widths together, as the average umbrella will require a circle of from forty-eight to fifty-two inches in diameter. This is the top of your bag. Next take a strip of the muslin, thirty-six to forty inches wide and long enough to reach around the circle, and sew a hem, to run the draw-string through, an inch wide the full length of one side. Then sew the other edge to the circle all the way round, 'doing it on the machine. This is the most difficult part of the whole operation and one may have to turn this over to the seamstress of the family. He can then blame her if the finished bag does not hang right.



THE APOTHECARY—Thirty-five grains Normal Victor powder, stop U. S. 4, Central Panchromatic Ortho Double-Coated plate

Next sew up the slit down the side where the two ends of the long strip meet, leaving one side of the hem open for the ends of the draw-string. Run the tape through with a hairpin or bodkin, tying the ends together to prevent their being drawn back into the hem and lost when the bag is opened to eject the smoke. Now turn your bag, seams inward, over the umbrella frame, pull the draw-string, and your bag is complete; but, before using, it must be soaked in some fireproofing solution. A good formula is:



HALLOWE'EN PARTY—One hundred grains Normal Victor powder, stop U. S. 8, Central Special Portrait plate

Alum	8 ounces
Ammonium carbonate	2½ ounces
Boric acid	1½ ounces
Borax	1¾ ounces
Water	80 ounces

Soak fabric for half an hour, wring out and hang up to dry. A child's parasol frame can be utilized in the same manner to make a smaller bag suitable for hand use with small charges of powder.



"BUDDY"—Thirty grains Normal Victor powder, stop U. S. 8, Central Special Home Portrait plate

Almost any good hand flash lamp can be used with this bag. Personally, I have used the new Imp Flash Gun with entire satisfaction. If used without a stand, the lamp must be clamped to the handle of the umbrella, well inside the bottom of the bag. A chain or string may be attached to the trigger so that it can be discharged without inserting the hand in the bag, though I have fired one hundred and twenty grains without a burn, using a simple leather shield as a protection from possible falling bits of burning powder.

The bag being entirely separate from the frame, it is an easy matter to take it off and wash it, which should be done after every few flashes, as the smoke and dirt from the flash gradually clog up the fabric, cutting off much of the light. It should be reproofed each time after washing, the old solution being saved and kept on hand for this purpose.



Graflex Work In Winter

By Gus A. Swanson



With Illustrations by the Author

The extremely cold weather and heavy fall of snow during last January caused the game animals to come down from the mountains into the Yellowstone National Park, where the government has been feeding them a small ration of hay once a day. As the amount of such feed available is limited and there is estimated to be about one hundred and fifty sheep, two hundred deer and some three thousand elk at Gardiner, they do not all get as much food as they should have, but it is hoped that a great deal of loss and suffering may be prevented. Their hunger and the provided food have had the effect of making it possible to approach closer to them than is usually the case. The pictures shown herewith were made with a 5x7 Auto Graflex, the two of the deer being taken with a Series II Cooke lens, stop f-16, with one two hundred and thirty-fifth of a second exposure. The two of the mountain sheep were made with a



ROCKY MOUNTAIN SHEEP—Auto Graflex, f-11, 1/160th second exposure

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DEER FEEDING—Auto Graflex, f-16, 1/235th second exposure

No. 3 Cooke Telar lens working at f-11 with one one hundred and sixtieth second exposure. All of the pictures were taken about noon, the first two on a fairly clear day, while the other two were made on a slightly overcast day, the sun not being sufficient to cause shadows.



DEER RUNNING—Auto Graflex, f-16, 1/235th second exposure

Ultra-Rapid Flashlight Work

By W. J. Morrison



With Illustrations by the Author



MY FIRST EXPERIMENT

amount of the magnesium powder at one side of the camera, taking care to keep out of the field of the lens; and then, by going to the other side and again illuminating the scene, avoid the harsh shadows occasioned by using the flash at only one point. Furthermore, in cases where the subject was much darker or less actinic in one part than in another, the difficulty could be overcome by making two or more flashes of different duration, according to the effect desired. Another advantage lies in the much smaller amount of smoke, dust and objectionable odor created as against the explosive or regular flash powders, which last must never be used in one of these blow-through lamps required for magnesium powder. Magnesium ribbon I found best suited to the purpose of making enlargements, copying, or in photographing small objects, cases in which it was important that a definite amount of exposure be given. By measuring the length of the ribbon, one can determine the exact relative amount of exposure, which is not always possible when flashlight powder is used, for the reason that the degree of illumination with the latter depends somewhat upon the distribution of the powder as it is ignited. A few experiments will convince one that if five grains of a given flash powder will give a certain amount of illumination, there is no certainty that ten grains will give double that amount,

VER since I began to dabble in photography, I have been fascinated by the possibilities of the flashlight. Magnesium powder, magnesium ribbon, flash sheets, flash cartridges and flash powder have all had my attention to the extent of exploring their various capabilities. Where exposures of some duration were permissible, as in the case of interiors with no figures present, my preference has been for the pure magnesium powder, used in a lamp of very simple form, one that permitted me, by blowing through a short length of rubber tubing, to force the powder in a fine spray through the flame arising from a ring of wicking saturated in alcohol.

With such a lamp I could burn a given

and it is easy to see that one hundred grains will not give ten times as much illumination as will the ten grains, for the simple reason that a portion of the powder is wasted by being blown aside as the flash explodes.

Flash cartridges and flash sheets I found to possess the merits of simplicity and convenience, as they avoided the necessity of weighing out a given amount of powder and, to a certain extent, avoided the necessity of using a lamp or other device. Using ordinary flashlight powder, I found it quite easy to secure the best of negatives with a certainty that I never enjoyed in making ordinary or daylight pictures, for the reason that there is only the amount of powder used to be considered. It is obviously much easier to estimate that a given picture requires a little more or less powder than did a similar picture taken at some previous time, than it is to figure out the amount and intensity of the daylight available under different situations.

Working in the ordinary way, I found the making of portraits and groups a very simple matter; in fact, one has only to avoid the tendency to produce under-exposed effects by not using sufficient powder. When we stop to think that one rarely if ever sees an over-exposed flashlight negative, and still more rarely sees one that has received so short an exposure as to be entirely worthless, it would seem that the giving of a fairly correct exposure, which is equivalent to using the proper amount of flash powder, must really be a very simple matter. The truth is that in using the flash there is such an equal distribution of the illumination that, while sufficient powder must be burned in order to secure the best possible negative, there is still considerable latitude at one's command. While my work in this direction was quite satisfactory, I was never thoroughly pleased with it, for the reason that the subjects invariably appeared conscious and frequently carried a rather startled look. This difficulty I tried to overcome by using some of the extra rapid powders on the market; and, while the results secured were more to my liking, I still found that in the case of figures in fairly rapid action there was no certainty of avoiding the blurred effect when such motion exceeded a certain speed. This limit of speed seemed to be about one-fortieth of a second.

Knowing of my interest in flashlight work, two of my friends, photographers on a local paper, showed me a little device that they were using that permitted them to make flashlight pictures of rapidly moving objects, an attachment actuating the high-speed shutters of their cameras at the moment of the highest efficiency of the flash. My experiments with the rapid brands of flashlight powder had convinced me that their speed was about one-fortieth of a second, and this I of course found was not enough to prevent blur in the case of rapid motion. With this little device, which consists primarily of an adjustable cover controlling the shutter release, one that can be applied to the powder pan of any of the flash lamps on the market, and even to the Eastman flash cartridge. The shutter, set at any necessary speed to stop the action, is actuated at the instant when the flash reaches its maximum of intensity, and so arranged that adjustment can be made for shutters that are a little "slow on the trigger," as some are found to be.

ULTRA-RAPID FLASHLIGHT WORK



PAVLOVA THE DANCER IN RAPID MOTION

These two friends of mine had been using the device for several months, in an experimental way, and the remarkable results which they had secured inspired me with interest to give it a trial on my own camera. This they were kind enough to permit me to do, by placing one of their attachments at my disposal; in fact, one of them offered to show me just exactly how simple it was in actual operation. Setting up my $3\frac{1}{4} \times 4\frac{1}{4}$ kodak, fitted with a Cooke lens in a Multi-Speed Junior shutter, I set the latter at one three-hundredths of a second, and then, holding the camera in my left hand and my loaded flash lamp with the new device attached in the right, I was ready for an exposure. Then, to secure motion, one of my friends made a short run and jumped over a chair placed at right angles and but a few feet in front of me. The first trial was not a success through my failing to fire the lamp at the right moment, but at the second attempt I shot the flash just as the subject was in mid-air and the picture shown herewith demonstrates the ability of the device to stop rather rapid motion. The Cooke lens was stopped down to f-11 and about thirty grains



THE LITTLE NEIGHBOR IN FANCY DANCES

of Victor Normal Flash Powder was used in the lamp, the room being a very large one with dark brown walls that absorbed rather than reflected any of the light.

My interest in flashlight work and my enthusiasm at finding that it was possible to handle successfully the rapid motion that had so long been a cause of disappointment to me, resulted in an invitation by my friends, the press photographers, to accompany them on a "detail" that involved the taking of several pictures of Pavlowa, the dancer. While I myself did not make the exposures, I was enabled to appreciate the ease and simplicity with which the results were achieved, and permission was secured to reproduce three of the pictures herewith. There were five negatives made, all equally perfect, and it is unnecessary to explain that they fully met the requirements of the editor of the daily, who insisted that he wished the pictures to show all the action possible. The negatives were made with an ordinary 5x7 camera fitted with a between-lens shutter set at one three hundred and fiftieth second; as nearly as I could judge, the amount of powder used was about thirty grains for each exposure.

Seeing how easily these results were secured, I essayed the making of some similar pictures of a little lady neighbor who is learning some fancy dances and who has several times asked me to try my skill in order that she could see for herself how she looked in doing the various steps. These pictures were made in an ordinary small gymnasium that is used by the dancing teacher, and as the walls are very light and the necessary depth of focus was not great, I found it easy to make the five negatives in a very brief space of time, using my kodak with its Cooke lens at f-8, the shutter set at one three-hundredths of a second and a little less than thirty grains of powder to each. Three of the pictures are reproduced herewith, and no indication of blur in any of the five made.

I am not sure as to the intentions of my friends as to the marketing of the device, as it was primarily intended for their personal use; but as it is patented, I suppose that their plan is to try to arrange for its manufacture and marketing, if not for the purchase outright of the device, by some manufacturer of photographic specialties. While this article may appear somewhat as an advertisement, I can assure my readers that such is not my intention, but rather that my delight at finding it so easy to overcome the difficulty of photographing, by flashlight, subjects in rapid motion, inspires me to present these few examples of what can be done in that direction. Should others like myself be interested in this phase of the subject, they can no doubt get in touch with these inventive friends of mine by dropping a line to the editor of this magazine. At my request, they have called upon Mr. Clute, and, after showing him the device and some of their own most excellent results, promised that they would give their best attention to any inquiries that might be sent in, should the interest of any readers extend that far.

This, then, is the object of all expressive art: to convey by a symbolic language to people's minds through their eyes conceptions, impressions, ideas, or emotions of pictorial beauty.—JOHN C. VAN DYKE.

Hydroquinone Without Metol

By Charles I. Reid



With an Illustration by the Author



OUT-DOOR PORTRAITURE

An imported chemical, metol, has come into such general use as a developing agent that the photographic industry finds itself somewhat unprepared for its disappearance from the market. Metol and similar developing agents are at present unobtainable in the open market and there is little hope that the situation will be relieved in the near future, unless the research work being done by different parties should result in a discovery permitting of the manufacture of a suitable substitute in commercial quantities. The logical course for the photographer and the maker of motion picture films is to conserve any small supply of the chemical that they may have, and use, as far as possi-

ble, such developing agents as can be manufactured independent of the coal-tar supply.

Hydroquinone is being manufactured in the United States in such quantities that it is reasonably certain the supply will keep pace with the demand. With the proper proportion of sodas and bromide, this makes an excellent developing agent for all classes of photographic work. Hydroquinone has the reputation, as a developing agent, of giving great contrasts. It is not generally known that, with the proper manipulation, it is capable of giving not only a wide range of gradation, but results that otherwise compare very favorably with those obtained when it is used in combination with one of the soft-working developing agents. A hydroquinone formula that has proven very satisfactory for developing papers, one supplied by the Eastman Company, is as follows:

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Water	30	ounces
Hydroquinone	100	grains
Sulphite of soda, dry.....	200	grains
Carbonate of soda, dry.....	2½	ounces

The chemicals are dissolved in the order given. For use with Artura or Professional Cyko paper, add one drop of a saturated solution of potassium bromide to each ounce of the above; for use with the commercial grades of paper, add one drop to each three ounces.

The action of this developer is somewhat different from that of a metol-hydroquinone combination, the print assuming the appearance of being over-timed at the beginning of development, but gradually building up and clearing as development proceeds. The final results are scarcely distinguishable from those secured by developing in a solution containing metol. In compounding a hydroquinone formula, it is especially essential that the chemicals used should be of standard purity, for hydroquinone is very sensitive to a difference in variation in the strength of the sodas used. The temperature of the solution is also an important point; and, for the best results, the above developer should be used at from sixty-eight to seventy degrees Fahrenheit.

The motion picture industry has been the heaviest consumer of metol and the scarcity of this chemical has forced the large producers to adopt new formulas for their developers for negative and positive films. Fortunately, it has been found that with the proper formula and a little care in working, it is possible to obtain results almost identical with those formerly secured with a combination of metol and hydroquinone, by using only the latter agent. Since many photographers are now taking up different branches of motion picture work, it may be well to give the formulas at present being used for negative and positive motion picture films by some of the large producers:

Water	10	gallons
Hydroquinone	13	ounces
Sodium sulphite, dry	4	pounds
Sodium carbonate, dry.....	4	pounds
Potassium bromide	3	ounces

Dissolve chemicals in order given and use solution at a temperature of from sixty-five to sixty-eight degrees Fahrenheit. The maintenance of this temperature constantly throughout development is very important in obtaining the best results and the avoidance of any traces of stains. It is a good plan, as a further precaution against stain, to immediately stop the action of the developer when development is complete. This is done by rinsing the film in a short-stop bath consisting of thirty-two ounces of acetic acid No. 8 in ten gallons of water. The film is then transferred to an acid fixing bath made as follows:

Water	10	gallons
Hypo	21	pounds

Mix the following hardener separately; and, after all chemicals are fully dissolved, add to the hypo solution given above:

* PARAGRAPHS PHOTOGRAPHIC

Water	40 ounces
Sodium sulphite, dry.....	4 ounces
Alum, white, not chrome.....	8 ounces
Acetic acid No. 8.....	24 ounces

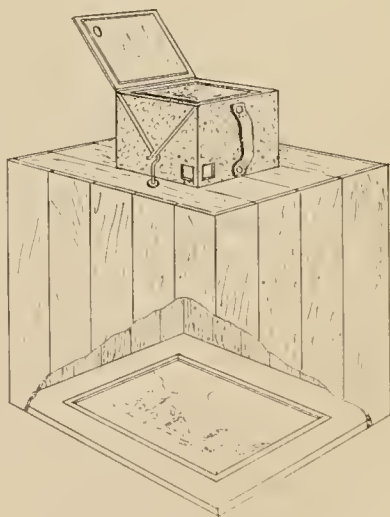
When the film is completely fixed and thoroughly washed, it is then given an immersion for two minutes in a glycerine bath composed of thirty-two ounces of glycerine in ten gallons of water. This is for softening and preserving purposes.

This motion picture formula can be used for the development of plates and films, the same care being taken to have the solution of the proper temperature. Raising the temperature of a hydroquinone developer increases contrast and lowering it increases softness, is an important point to remember. Should the initial results be not of the exact degree of softness desired, the amount of contrast, within reasonable limits, can be regulated by the temperature of the developer.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

AN INEXPENSIVE, IMPROVISED ENLARGER: My camera is a modest little box of the fixed-focus type. Wishing to make some 5x7 enlargements from one of my negatives, I went about it in the following manner. I opened the back, put a film negative in position with a piece of ground glass on top to hold it flat. Clamping the latter in place with a couple of rubber bands, I propped the camera up with the back against an opening of the same size, cut in a large sheet of cardboard that had been temporarily tacked up to darken the lower part of a window, above which a heavy blanket was held in place with a few tacks and pins, thus making the room quite dark. With a sheet of white cardboard moved backward and forward in front of the open lens, I located the distance at which a sharp image of the desired size was secured, namely, a trifle over fifteen inches.



I next selected an empty box, cut a round hole in the center of one end and cut enough off the other end so that a 5x7 printing frame placed there would bring the surface of the paper at the proper distance from the lens when the

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camera was placed snug against the other end. The printing frame being smaller than the end of the box, I fastened strips of wood all around to form an opening into which the printing frame just fitted. A strip of dark cloth was tacked all around the inner edge of this opening so that no light could get in at that end and two turn buttons at the outer sides of the opening kept the frame from dropping out. The inside of the box was lined with black paper to further insure its being light-tight. A pad of thick cloth with a hole in the center was tacked over the other end so that no light could get in around the opening when the camera was placed with its lens over the round hole in the top. Hooks were screwed into the box, one on each side of the camera, so that a strong rubber band stretched from one to the other, across the camera, held the latter from slipping around. I have since smoothed the box up a little and given it a coat of paint, making it quite presentable.

The camera in position, the enlarger was taken into the dark-room, a sheet of bromide paper inserted in the printing frame, the shutter set for time exposure, and, carrying it again outdoors, my first attempt at a bromide enlargement was made. That particular exposure proved to be too long, but a few trials enabled me to judge the exposure for almost any negative. I also found that the negative should be a little further away from the lens than the position occupied by the film when the camera was used as such, so I built up a negative holder that would fit the opening at the back of the camera and hold the negative to be enlarged at the proper distance.—Temple Campbell, California.

INTENSIFICATION: I find most amateurs have trouble with stains when using chromium method. With me the following give good results. First bleach negative about two minutes or until it looks like a positive, in the following:

Water	85 cubic centimeters
Potassium bichromate	3 grammes
Potassium bromide	3 grammes
Hydrochloric acid, C. P.....	1 cubic centimeter

Wash about twenty minutes or until all free color is removed. Then redevelop in the following:

Water	230 cubic centimeters
Sodium sulphite.....	3 grammes
Pyro	1 gramme

Develop about seven minutes at sixty-five degrees Fahrenheit. Wash well and dry.—J. W. L., California.

PINHOLE: To eliminate these troublesome defects, get a small air-pump costing about fifty cents. Remove the camera back, draw out front board as far as possible to extend bellows, and then blow out the dust. If using plates, blow the dust out of the holder, particularly around the light trap where the slide goes in, doing this before loading. After loading and before putting in slide, blow the dust off plate. Working in this way, the plate does not become electrified and hold the dust as it does if a brush is used.—J. W. L., California.

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No. 5

The High Cost of Material

While of course it is inconvenient to find metol practically off the market, or at least almost prohibitive in price, and other chemicals trying very hard to follow the same example, not to mention prospects of higher prices for other material, we really cannot see why photographers blind themselves to the silver lining that the cloud certainly carries. The opportunity is presented for a general increase in the prices demanded for the work turned out, and an opportunity such as will not soon be again available. The portrait man makes some pictures for the wife of the baker, who is loudly complaining of the high cost of everything from flour and sugar through the entire list. The commercial man does a job for the manufacturer who has been compelled to raise his own prices quite a little in order to meet increased costs. Each and every customer of the photographer has experienced and become as near reconciled as possible to paying higher prices for a no small part of all his purchases. Such of the photographer's customers as are themselves selling some product have either raised their prices or feel that they should do so. What more simple than that the photographer should raise his? He should at least increase his charges enough to cover the increased cost of material and there is no good reason why he should substitute the unprofitable grumbling over high prices for the more obviously profitable plan of asking his customers to pay the increased cost of the pictures they may order. True, raising prices may result in an occasional loss of an order because some competitor has not raised his, but there is always some one who will make photographs at a lower price, and a few more or less such do not make much difference with the photographer who is doing good work and giving good service. Our contention is that the individual photographer will find it easier to raise his prices at this time than he would at any other, and we believe that the general prices for photographic work are none too high to make a slight increase unfair to the purchaser. The high cost of material is just as good an excuse for the photographer to raise prices as it is for the dealer in any other commodity, and practically all other dealers are asking their customers to pay this additional cost, if not more.

Our Farm Paper Cover Competition

The farm papers throughout the country find considerable difficulty in obtaining the kind of pictures they want for use as illustrations for their front cover pages. The making of suitable pictures is not a difficult matter for the reason that good subjects abound on every hand wherever there is rural activity. The requirements of the editors are not exacting. As near as we can determine from a close examination of such publications for a year or more, they wish pictures that have human interest as well as a farm flavor, and the

pictures should suggest, by the surroundings included, that agriculture, as a pursuit, is enjoyable and reasonably remunerative. The object of our competition is to encourage effort along the line of producing such pictures. The time limit has not been set and should any of our readers care to send a few prints of subject such as they may have on hand, with a request that we make criticism thereof, before they take up the work of making special negatives for the purpose of entering the competition, we will be only too glad to give them the benefit of our advice, based on the prints sent. One can quite easily secure from the publisher of their local paper the name and address of a number of farm publications; and, by sending for sample copies, get a still better idea of the requirements. Prints sent in to our competition will not be made available to these publishers except as we may, as suitable work finds its way to us, advise the maker where a possible market can be found. Mr. Blanchard's article in this issue will help and his previous one in the March issue could be consulted.

The Coming National Convention

The Thirty-sixth Annual Convention to be held at Cleveland, July twenty-fourth to twenty-ninth, inclusive, promises to be one of the most interesting and instructive ever held. Over twenty of the most capable demonstrators and lecturers will cover a wide list of topics, ranging from art talks to enlightening discussions of business methods, with instructions, posing, lighting and commercial features in between. Cleveland is a delightful city, it is centrally located, the date is well suited to a little trip for recreation and improvement, and the officers have certainly given their unstinted efforts, along with their intelligent appreciation of what is required, in order that a high standard may be achieved. The exhibition of pictures will be the best ever gotten together and the manufacturers have promised to excel themselves in the matter of their individual displays.

The New Catalogues

Every photographer should get together a collection of the new catalogues and give them all careful study. There are many new features, new models, new forms, and one should keep himself advised as to what is offered. The particular camera, lens or other apparatus one is using may be such that the cost of changing to something more suited to his individual wants may easily justify the outlay in exchange for the increased pleasure and satisfaction. And in sending for the new catalogues, do not overlook the fact that some of the dealers in second-hand apparatus can often be of material assistance in adding to one's pleasure or profit through the wide assortment of bargains offered.

Hydroquinone Being Manufactured

Professor E. J. Wall, of the Photographic Department of the Syracuse University, advises that the Du Pont Chemical Works, with offices, we believe, at 120 Broadway, New York, is now manufacturing hydroquinone on a small scale, with every prospect that the output will largely increase in the near future, hydroquinone becoming a standard Du Pont chemical product.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Converting a Rapid Into a Wide-Angle Rectilinear

Looking at sectional diagrams of a rapid rectilinear and of a wide-angle rectilinear, respectively, the close resemblance of the two lenses is manifest. The principal difference is to be found in the fact that, in the case of the rapid rectilinear, the two combinations are separated by a tube, the length of which is usually greater than the diameter of the glasses. As a matter of fact, there is no other important difference between the two types. This separation is a necessity if the lens is to be used at a large aperture with a flat field; but it has the effect of limiting very greatly the angle of view which the lens will embrace. If we take a rapid rectilinear and remove the tube, substituting for it a very much shorter one, so that the two lenses are almost in contact, inserting in the middle of this short tube a comparatively small stop, it will be found that the angle included by the lens has been enormously increased by the process.

An old quarter-plate rapid rectilinear in the possession of the writer has been mounted up in this way, the tube being one of card into which the two lenses fit right up against a central stop an eighth of an inch in diameter. They are kept in place by lids like pill-box lids, perforated, of course, with holes about the diameter of the glasses themselves. It is important that these should go right up against the glasses, or some of the side rays will be cut off. The effect of this alteration is to shorten the focus of the lens by about half an inch, while it increases its covering power several times. The lens as originally issued does not allow much rise on a quarter-plate camera; the same lens as modified will cover a whole-plate right up to its corners. As its focus in the modified form is not much over five inches, it will be evident that it includes a very wide angle. The stop f-40 is a small one, it is true; but rapidity is not generally called for in the work for which a

wide-angle lens is needed. The lens is in no way unfitted for its original purpose by the alteration which is here suggested, which, in view of the cost of another lens for wide-angle work on a large plate, is a decided economy.—F. Holt in *Photography*.

Zeppelin Photographs

During the earlier Zeppelin raids on London it is said that photographs were obtained showing the airship in the glare of the searchlights below. Some of these have been reproduced in the papers, and others have been published in post-card form. On several occasions recently these reproductions have been sent to us by readers who have felt doubtful as to their genuine character, and have inquired whether this might be taken for granted or not. As the subject is one of general interest, and as it is capable of wider application than to Zeppelins alone, it will be well to look into it rather closely.

As far as the intensity of the light is concerned, there is no doubt that the illumination is quite strong enough, if the whole of the photographic conditions are favorable. That is to say, if the lens is working not slower than f-6, the plate is a fast orthochromatic or panchromatic, and the shutter is capable of being slowed down to the tenth of a second or more. On one occasion at least the Zeppelin was apparently stationary long enough for a cap exposure to have been given. There is then, on the face of it, no reason why these pictures should not be what they purport to be. Doubt on the subject seems to have arisen from two causes—one, the size and shape of the image of the airship, and, two, the very evident handwork on the pictures.

As far as size is concerned, any one with sufficient data can work out in a very few minutes how large it should appear; and, although the data in most cases may be only rough approximations, they will serve to test whether any particular picture is improbable or not.

CAMERA CRAFT

When an object is far enough away to be focused at "infinity," the length of the image should bear the same proportion to the length of the object as the focus of the lens bears to the distance of the object.

Let us see for a moment how this applies to a Zeppelin. The length of the airship may be taken as being in the neighborhood of five hundred feet; while we will assume that it is a mile high, and is hovering over a spot a mile away from the camera. We know, from "the square of the hypotenuse," that the distance in a straight line from camera to Zeppelin is then approximately one and two-fifths of a mile. If the lens is one of six inches focus, we divide one and two-fifths of a mile by six inches, getting 14,784, or in round numbers 15,000. The length of the image of the airship, then, will be one fifteen-thousandths part of five hundred feet, that is to say, two-fifths of an inch.

There is nothing in the photographs which we have seen to suggest that the airship was shown on an unnaturally large scale. With a six-inch lens focused sharply on a distant object like that, the resulting negative should bear enlargement to two or three diameters without any perceptible loss of quality, so that it might easily appear an inch or more in length. There are also many hand cameras fitted with telephoto lenses of fifteen to eighteen inches focus, which, under the conditions we have assumed, would give an image about an inch long.

It has been said that the shape of some of the images of the Zeppelin has been altogether wrong and suggestive of "fake." It may be so, but we should rather look on this as evidence of their genuine character. Any one painting in a Zeppelin would surely copy one of the existing large-scale photographs which are easily accessible, whereas the outline of one, much foreshortened and possibly moving perceptibly during the exposure, would very likely seem altogether wrong.

It is unfortunate for the credibility of the pictures that all we have seen seemed to be greatly worked up. The next photographer who is fortunate enough to get a negative of a Zeppelin in action will be well advised not to put any handwork on his negative at all. If, as is likely, the image is extremely faint, let him enlarge it onto a slow lantern plate or onto slow gaslight paper in a lantern, so as to get what contrast he can that way. If

it is a lantern plate he uses, then let him intensify the image on it with, say, the Wellington silver intensifier, and when he has got as much vigor as he can in that way, let him make a fresh negative and intensify that. He can thus pile on density until the most ghostly image becomes a vigorous one, while he will have his original record untouched.—*Photography.*

Composite Portraits

A third of a century has passed since Francis Galton described to the members of the Anthropological Institute his newly devised method of making what he termed "composite portraits." At intervals since then the process has been heard of; but very little seems to have been done to utilize what is a very interesting and scientifically valuable method.

A composite portrait, as its name suggests, is not the likeness of any one individual sitter, but one which forms a kind of average of a number of sitters. Each contributes his quota to every part of the result; but if the work has been properly carried out, no one contributes more than any other. Such composite portraits have been made of members of one family, of certain classes of criminals, of students at a college, of a number of individuals of some particular race; and in each case, it is curious to note that the composite is very decidedly better looking than any of the individuals composing it. This Mr. Galton explained by saying that "the average portrait of many persons is free from the irregularities that variously blemish the looks of each of them."

The method of making these portraits is very simple to any one possessed of a copying camera, the plan being to expose a plate to each portrait of the series for a fraction of the total time required.

An amateur photographer would find it a matter of great interest to form a composite portrait of all the available members of his family; and, as it can be done as a mere supplementary process to taking their portraits in the ordinary way, the extra labor involved is very small.

The first stage is to get a set of portraits of the individuals, all the portraits being similar in lighting and aspect. They should be full face, and when once a satisfactory scheme of lighting is arranged, it should be

A PHOTOGRAPHIC DIGEST

left unaltered until all the portraits are made.

Each portrait should be of the same size exactly, and to insure this a fine line is ruled on the ground glass, and upon that line two marks are made at a suitable distance apart, the position of the line on the ground glass being governed by circumstances. Each sitter is then photographed so that the line passes exactly through the center of the pupils of the eyes, the two marks on the line also falling at those centers. From the negatives so obtained, a series of prints on glossy printing-out paper may be made, and these are then combined.

The prints require register marks, to make which a piece of card is provided with an aperture in its center somewhat larger than the faces. Across this aperture two threads are stretched at right angles. At the top of the card, a few inches apart, are two pinholes. Putting the card down on one of the prints, it is shifted about until one thread passes exactly across the center of the eyes, while the other thread divides the interval between the pupils into exactly equal parts. When this is so, a needle is thrust through each of the pinholes in turn, so as to prick the print beneath.

The whole of the prints are then threaded on a couple of pins or needles (the latter are preferable), passed through the holes so made, and are fixed up on the copying easel. The correct exposure for a copy having been decided, the total time is divided into as many parts as there are prints. Thus, if we have a dozen prints, and the exposure is one minute, we give the plate five seconds to the first print, cap the lens and remove that print, and give five seconds to the one underneath, cap the lens, and give five seconds to the one under that, and so on; until at the finish, the plate has received its full exposure of a minute, it is true, but divided equally amongst the dozen different prints. Moreover, thanks to the accurate registration provided by the needles, the eyes in each print will fall in the same place on the plate, although owing to individual differences, the positions of other parts may vary. All that has to be done to obtain the average or composite portrait is to develop and print the negative so exposed.

The result will have a very strikingly real appearance, although, of course, it is a portrait of a being which never existed or could

exist. It will be found that it does not contain sharp lines, as in an ordinary photograph, but is softened and diffused, owing to the differences of the individuals, the softening being greatest where they are most diverse, the eyes, owing to the method adopted, being the sharpest and most distinct.

If any reader should attempt to make a composite on these lines, he will do well to give particular attention to getting his original prints as uniform as possible, in size, lighting, and in their final tone, so that with equal exposures they may have an equal effect upon the plate. It is possible to combine a number of portraits of different sizes, by ruling lines on the focusing screen and focusing each portrait separately on such a scale that the eyes come upon the marks so made; but this is much more laborious, and is not to be adopted if the original prints can be made all of a size as described.

It will be seen that there is nothing in the production of one of these composites which calls for anything out of the way either in photographic equipment or in technical skill.
—*Photography.*

A Printing Process For Physical Development

An interesting demonstration was given at the Camera Club last week by Charles M. Thomas, M. A., of a printing process which he has introduced for physical development. He explained his purpose as being to bring into the paper solely those compounds of silver which should be soluble in water; this has involved the use of some chemical combinations unfamiliar to the generality of photographers. As a coating solution for the paper, in order to give a visible image for ordinary negatives, he employed:

Citric acid	12 drops
Ammonia-copper chromate	4 drops
Ammonia-silver chromate.	20 to 25 drops
Gelatine	3 grains
Water	1 ounce

For a faint image in the case of harsh negatives, he reduced the proportion of citric acid to one-half of that given above, and reduced the ammonia-silver chromate to from 12 to 15 drops, the other ingredients remaining the same. This solution was boiled until the gelatine was dissolved, and was then coated fairly thickly on paper (several of the ordinary paper surfaces answering satisfactorily, and, indeed, the demonstration was

carried out on a sheet of ordinary note-paper) with a stiff hairbrush, care being taken to wash the brush immediately afterwards. When the paper was sufficiently set not to drip, he took it in full light and dried it in front of the fire. The compound was not sensitive to light until dry, after which it had to be handled in subdued light. The paper took about as long to print as printing-out paper. On exposure, an extremely faint image was obtained. His development formula was:

Sodium sulphite, saturated sol. $\frac{1}{2}$ ounce
 Water $\frac{1}{2}$ ounce
 Ammonio-silver nitrate, 10 per cent 2 drops
 Gum arabic solution.....about 1 dram
 Hydroquinone solution 3 to 5 drops
 The hydroquinone solution consisted of:

Hydroquinone 30 grains
 Potassium or sodium metabisulphite. 15 grains
 Water, boiled 1 ounce
 There were obtained first yellowish, then reddish, and then purple tones, and one might even, if the conditions permitted, go on to black tones. Development was rather a lengthy process, the sulphite having a strong retarding action, but Mr. Thomas claimed that with this method the paper could be sensitized, dried, exposed, developed and got in the frame or mounted on the card in well under an hour. After development the print was washed perfunctorily in two or three changes of water, and dried, if need be, in front of the fire. The results were pleasing, and the lecturer claimed, although a little uncertain about the copper element, which is a recent introduction, a fair permanence. It was especially interesting to find no deposit on the dishes.—*Amateur Photographer*.

Changing and Developing Plates By Fire-light

Winter, in the sense of the shortest days, is passing away, though in chilliness it is increasing. And the days are still short enough to make this letter of use and interest to those who get "choked off" photography during the winter, and still cold enough to make readers grasp at an opportunity of escaping from dabbling in cold water in a chilly bathroom.

Two years ago I discovered, to my great surprise, what an extraordinary amount of light a plate will stand, provided no direct white light falls on it. I had arrived at Baalbek, in Syria, about three in the after-

noon on a June day. My plate-holders were filled with exposed plates, and I was immediately going to view and photograph the famous ruins. And the hotel had no dark-room! The best they could do for me was to lead me to a large, light cellar where men were sorting fruit. Light filled it from a large opening to the outer air, and also from the glass door. Even when I got a mat placed over the one opening and a boy to hold a cloth over the glass door, the cellar was still full of light. I had to risk it, or miss my photographs. I risked it; and although I could see the white plates with alarming clearness—and they were half-plates, too—I managed to effect the exchange without fogging any.

Remembering this, and having a plate to develop about a month ago, I developed it with the greatest of ease in my sitting-room. I waited till about four in the afternoon, and just pulled down an ordinary yellow-tinted blind. This left plenty of light to see my watch by and conduct operations. There was no trace of fog.

Since then I have developed several plates in the greatest comfort by bright firelight. Although I covered the dish and gave time development, yet I always examined the plate two or three times in the course of it, and there was not the least fog, not even at the conclusion of the time, when I examined it by the transmitted light of the fire.

This firelight development is indeed a great boon to me, both in comfort and the saving of time. It also saves my becoming a nuisance to others. The whole process to the drying of the plate is done in comfort by my fireside. I find that a pint of water is ample with which to wash a half-plate, giving it enough to cover it each time, and pouring it off after some minutes into a spare jug. Some of my readers may say: "But how much firelight? It may vary from a red glimmer to a bright, roaring blaze." I use a nice bright red fire, but I must have some blaze, or I cannot see the second hand of my watch, which is not black, but gold. I need hardly mention that I do not allow direct firelight to fall on the plate till development is concluded; and that which falls on it for short periods, being reflected from the ceiling and walls, seems to have no injurious effect.—Rev. W. Bernard Dyer in *Amateur Photographer*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Pyro-Stained Fingers

A friend called the other day and in the course of the conversation reported that he had returned to pyro as a developer for his negatives, owing to the high cost of the coal-tar developers. He went on to explain that he avoided all staining of his fingers by the simple expedient of keeping close at hand some sort of an acid solution, generally one of about ten per cent strength of acetic acid, and dipping the fingers into it each time before they were to be immersed in the developer. We are not quite sure that this would prevent all staining were a great amount of work being done, but in his case his fingers were quite free and clear of any suspicion of the dirty brown stains that pyro solutions are so fond of leaving.

Star-Like Markings

An Illinois correspondent complains that he has subjected some negatives to an uranium intensifier with the result that they now show markings in the form of a large star with arms or points radiating from a spot near the center. These are the result of holding the intensified negatives under a tap for washing. Washing following uranium intensification should be done in water, to which has been added about a drachm of acetic acid to the pint. Water to which a little alkali has been added will remove the intensification, and as most water is slightly alkaline, if it is allowed to fall upon the intensified negative, as from a tap, will result in an effect such as our correspondent has secured.

Trouble In Sepia Toning

Sepia toning by the sulphide redeveloping method, blue spots sometimes appear on the print after treatment. These are due to the potassium ferricyanide being impure to the extent of carrying iron in a more or less free state. The remedy is to use only the best or what is known as chemically pure potassium ferricyanide, despite the fact that it

costs somewhat more. One should also avoid the use of sodium sulphide that has been allowed to grow old while exposed to the air. Such will show some traces of hypo and result in a yellowish brown rather than the rich sepia brown desired. This results from the hypo acting in connection with the ferricyanide in exactly the same way as does Farmer's reducer, which is made up of these two chemicals, hypo and ferricyanide.

Testing For Hypo In Prints

An Illinois correspondent wishes to know how he can make sure that his prints are thoroughly freed from hypo after being washed for a certain time. This he can do by applying the starch-iodine test. This consists of a little ordinary starch paste having a drop or two of tincture of iodine added to it after it has thickened, enough being added to make it a good blue color, iodide of starch being formed. This is next diluted down until a little of it being applied to a white surface shows only a slight tint of blue. To use, drain the print from the wash water for a minute or two and then put a drop of the iodide of starch solution on the back. If at the end of a minute the blue tint of the solution is still perceptible, the print can be considered as free from hypo. If not, washing should be continued and another test made a little later.

Making Prints Translucent

An Oregon correspondent has an idea that he can achieve good results in making new negatives from prints by first making the paper translucent and then using the print itself, as a negative is used, in making a new negative. The plan is worth trying out, as he proposes to do if we will advise as to how best to go about treating the paper. While there are a number of methods of making paper translucent, vaseline is perhaps the best. To use, daub it on the back of the print in generous amount, and then hang up to dry in a quite warm place, in front of a

fire being ideal. As the paper becomes warm the vaseline runs, the air is driven out of the paper; and, as it cools the vaseline is drawn into the fibre. When cool, the excess of vaseline can be scrubbed off with a soft cloth; and then, if a sheet of ground glass is placed about half an inch in front of the clear glass against which the treated print is placed in printing on the plate intended for the new negative, very little evidence of the grain or fibre of the paper should show.

Metallic, Iridescent Stains

A correspondent in Iowa asks how these can be removed. He finds them in the usual position, just a little within the edges of some old negatives. They result from the use of stale plates or the long keeping of the negatives in an atmosphere contaminated by gas or other obnoxious fumes. The best means of removing them is to mix up a little Farmer's reducer and apply with a wad of cotton. Dissolve a small crystal of ferricyanide of potassium in some water and then add enough of the solution to an ordinary one-in-four hypo bath to give the latter a light straw color. The hypo bath should be a fresh one, one that has not been used for fixing purposes; and, as the hypo is decomposed quite rapidly by the ferricyanide, new solution should be mixed up as the old ceases to work. Dip the wad of cotton in the reducer, go over the entire surface of the negative quickly and evenly, and at once hold under the tap to prevent too much action or the formation of yellow stains from the ferricyanide. Repeat until the iridescent surface stains are removed.

Two Mistakes To Avoid

There are two bad habits we are all inclined to fall into, namely, wasting time trying to turn out passable prints from poor negatives that could be taken over again quite easily, and doing experimental doctoring on negatives that cannot be taken over or duplicated. If one has a poor negative of a subject that is easily available for another exposure, the right and sensible thing to do is to make a new negative and profit by the mistake that caused the first to be unsatisfactory. So doing may possibly require a little more time than one will expend in working with the poor negative, and again it may not. However, the turning out of a good print from an improved negative should be all the

incentive one requires to own up, both to himself and to any others interested, that the first exposure was not just as successful as he could have wished. When one has a poor negative of a subject that is not available for a new exposure, he should not experiment with it. If he desires to intensify it, particularly if using some process new to him, he should first try the remedy on a waste negative developed with the same developer and having about the same appearance. And this applies in the case of other remedies one may wish to try for the improvement of the negative in question.

Pictures Near Home

I never could quite understand why the average amateur, particularly the resident of a large city, should feel that his only opportunity of taking pictures lay in his getting some twenty or more miles away from home, on a clear day. Ninety-nine times out of a hundred there is a wealth of pictorial material well within street-car limits of his own home. And what is more, much of this material is such that a dull or even a rainy day is the best on which to secure the most pleasing results. All coast cities have their docks, shipping and the like, many inland ones have a river that presents most interesting life and activity along its banks, and other cities have their railroad yards or their various "districts" that are always odd and characteristic. The reason the resident amateur fails to appreciate them is that he either does not know of their existence or else their very familiarity blinds him to their pictorial possibilities. In one town that we know of there is a muddy, uninteresting small stream flowing past a few blocks at the outskirts, the location being seemingly devoid of all pictorial possibilities. Not long ago a visitor from another location took his camera down there and photographed the town from the opposite side of this stream, photographed a bend in the stream with a portion of the town in the background, took a picture that he titled, "Where Town and Country Meet," and otherwise made quite a satisfactory photographic outing out of the little trip from the center of the town to the end of the shortest car line. His only regret was that it was not a cloudy, misty day so that he could have secured some greater effect of atmosphere in the pictures.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Mobile Camera Club

A preliminary meeting of the camera enthusiasts of Mobile was held March twenty-third and another March thirtieth, which last resulted in a permanent organization. The prime movers in this club are: Richard Hines, Jr., Dr. H. W. Taylor, A. L. Clothier, H. G. Miller, R. Gaillard, R. Thompson, John H. Butt, Phil Cosminsky, E. S. Partridge, Arthur Sclater and Mrs. Clothier. The formation of this club is the outgrowth of the increased interest shown by local enthusiasts, and the enthusiasm displayed indicates that the club will be an active and growing one.

"Straight" Photography

C. H. Caffin, the well-known art critic, in passing upon an exhibition of the photographic work of Paul Strand at the gallery of the Photo Secession, Fifth Avenue, New York, has this to say in the *New York American*:

"It is significant that they should be exhibited just at the present moment when the comparative methods of objective and abstract art are occupying so many minds and the Forum Exhibition, which largely represents a reaction from objective, illustrative or representative painting—call it as you will—is in full swing. For these photographs can scarcely fail to give pleasure in varying degree to all sorts and conditions of people.

"Here, for example, is a winter view of City Hall Park: a vista of winding paved walk, spotted with figures and threaded with shadows of the bare limbs of trees, flanked in front by bits of iron fencing and turf, bounded at the back by a diversity of buildings. You may be disposed to size up the impression generally by the phrase: 'It is so wonderfully alive!' That's just it; it is a fragment of the kaleidoscopic variety of appearances and movements that make up our city life and are so familiar that we are apt

to overlook their wonderfulness. And the fragment has been caught in the directness of actual movement. It is wonderfully alive.

"For this result the photographer can lay claim to two achievements. He first exercised artistic knowledge and taste in selecting his subject and determining the exact position that his view should occupy on the negative. Then followed integrity of craftsmanship, leading up to the beautiful possibilities of tone inherent in platinum printing. Thus, while the contents of the picture are absolutely objective, outside himself, their vitality and expression have been enhanced by his personal taste, skill and honesty.

"Now such complete objectivity of purpose and achievement is impossible to the draughtsman or painter. However much he may try to depend on eyesight, something of his personal feeling must affect everything that he depicts. But today, with our increased scientific knowledge and our cultivated taste for accuracy, we demand an absolute objectivity. We are not satisfied to have the facts filtered through the subjectivity of the artist. We want our facts straight, and we can only get them so through the straight use of the mechanism of photography. The limitations of photography have long been dwelt upon; but its distinct, unrivaled and unassailable possibilities of picture-making are only now being incontestably proved, by such examples as these of straight photography."

The pictures by Mr. Strand are all straight prints on platinum paper, no doctoring or dodging of any kind having been employed in the making of either the negative or the prints. It is encouraging to have a critic of Mr. Caffin's standing deal in this manner with photographic work that is so entirely free from any of the manipulations that are believed by some to be so essential to the production of a photograph having more than the character of a "record," as they are pleased to term such work.

OUR BOOK SHELVES

"The Spell of Egypt"

Archie Bell, the author of "The Spell of the Holy Land," one of the most charming volumes of the well-known Spell Series, has given us another vivid and intimate picture of a country that has much of charm for the traveler as well as the reader. In his new book, "The Spell of Egypt," Mr. Bell has displayed the same power of holding the interest of the reader throughout by the entertaining manner in which he places before the reader the intimate knowledge that he possesses of this land of the lotus, this land of the hoary past. Despite the fact that "the books that have been written about Egypt, would dam the Nile," the reader will find this new presentation of the impressions of so charming a writer as Mr. Bell, most satisfying and entertaining. The book is uniform with the others of the series, it contains some fifty or more plates, many of them in full colors, and an excellent map of the country. Published by The Page Company,

Boston; price, two dollars and fifty cents net; carriage paid, two dollars and seventy cents.

"American Photography Exposure Tables"

There has just reached our desk a copy of the new edition, eighty-fifth thousand, of the "American Photography Exposure Tables." This valuable booklet has been completely revised, and contains accurate tables for determining photographic exposures under all conditions in all latitudes throughout the world. It lists all plates now known to be on the American market, and contains, in addition to the tables, a concise and comprehensive treatise on photographic exposure, outdoors and indoors, by day and by night, for still and moving objects, and for copying, reducing and enlarging. The book is completed by a number of pages designed for exposure records. Published by the American Photographic Publishing Company, Boston, Massachusetts. Price, vest pocket size, bound in cloth, twenty-five cents.

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- Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.
- Missouri—Wharton Schooler, R. F. D. No. 2, Eolia.
- Nebraska—Miss Lou P. Tillotson, 822 South 38th St., Omaha.
- New Hampshire—Mrs. A. Leonora Kellogg, Box 224, Londonderry.
- New York—Charles F. Rice, P. O. Box 517, Mamaroneck.
- New Jersey—Burton H. Allbee, 103 Union St., Hackensack.
- North Dakota—Jas. A. Van Kleeck, 619 Second Ave., North Fargo.
- Ohio—J. H. Winchell, R. F. D. No. 2, Painesville.
- Pennsylvania—L. A. Sneary, 2822 Espy Ave., Pittsburgh, Pa.
- South Dakota—C. B. Bolles, L. B. 351, Aberdeen.
- Texas—J. B. Oheim, P. O. Drawer M, Henrietta.
- Utah—John C. Swenson, A. B., Provo.
- West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS

- 4197—Fred Hultstrand, Fairdale, N. D.
- 3¼x5½, developing paper, of views taken in North Dakota and farm views; for anything of general interest. 3¼x5½ prints, unmounted. Class 1.
- 4198—Albert C. Boyle, Jr., Laramie, Wyo. Class 2.
- 4199—G. H. Bott, Willcox, Ariz. Class 2.
- 4200—Ira J. Bugbee, National City, Cal. Class 3.
- 4201—Edward A. Mueller, Jr., 72 New St., Newark, N. J.
- Any size up to 6½x8½, various kinds of papers, of Indians, lions, horses; also have some good pictures of Iren Tail, Indian on the American five-cent piece; for Western scenes, cowboys, Indians, Southern life and

- interesting subjects. Pictures on single-weight paper. As I have first-class subjects. I want same in return; all pictures must be clear and sharp, no fuzzy work. Class 1.
- 4202—R. H. Henry, Merritt, Wash. 2½x4¼, various papers, of mostly mountain scenes and streams, also landscapes; for any kind of view or scene of other parts of U. S. and foreign countries. Class 1.
- 4203—F. C. Lee, 1921 Mariposa St., Fresno, Cal.
- 2¼x3¼, 3¼x4¼, 5x7 and 8x10, developing papers, of portraits, nudes, trees and views; for artistic figure studies, nude or semi-nude, also bathing girls. Subject to approval both ways. Class 1.
- 4204—Claude Vedder, Anaconda, Mont.
- Post cards, various papers, of views H. L. C., Utah, also landscapes and general views; for anything of general interest. Class 1.

RENEWALS

- 188X—Edward Truman, Burton, Ohio. Class 2.
- 2659X—A. E. Willcutt, Box 25, Swift River, Mass.
- 3¼x5½, various papers, developing mostly, of landscapes, snow scenes, and a general collection of rural subjects; for any interesting subjects. Good work sent and expected in return. Mostly post cards. Class 1.
- 3300—Clyde Merritt, R. F. D. No. 3, McCune, Kan.
- 2½x4¼ prints and post cards 3¼x5½, developing papers, of country and city views; for post cards and 2½x4¼ prints of any interesting subjects. Class 1.
- 3329—George E. Bunn, 1571 W. First St., Los Angeles, Cal.
- 3¼x5½, developing papers from several thousand negatives of National Park and other mountain scenery, marines, speed and miscellaneous, including some figure studies; for photographs along the same lines. No post cards, only best of work wanted or sent. Class 1.

CHANGES OF ADDRESS

- 338—Mrs. A. Leonora Kellogg, Lock Box 224, Londonderry, N. H.
- (Was Manchester, N. H.)
- 504—Wm. A. Bixler, 625 Union Ave., Anderson, Ind.
- (Was 706 East 3rd St.)
- 3462—Ed Olson, 2319 Lincoln St., N. E., Minneapolis, Minn.
- (Was Laurel, Mont.)
- 3545—Mrs. Ina L. Cook, 45 Poplar Ave., W., San Mateo, Cal.
- (Was 237 Griffith Ave.)
- 4080—A. T. Moss, Hyampon, Cal.
- (Was San Francisco, Cal.)
- 4115—Edward Van Antwerp, Box 5, Geddes, S. D.
- (Was Dent, Minn.)
- 4156—Thos. P. Mason, 2333 Lawn Ave., Kansas City, Mo.
- (Was 3110 Dunham Ave.)

Illinois College of Photography

Alfred Clark and Hobart Proctor, who left the Illinois College in the fall, have gone into the "look pleasant, please," business at La Crosse, Kansas.

The highest tuition fee ever received at the colleges was paid recently by Francisco Arrieta Vizcaino, of Guadalajara, Mexico, who enrolled for the Three-Color Course. The Mexican dollar, at the present time, being only worth four cents in United States currency, the cost of his enrollment, in the money of his own country, amounted to five thousand five hundred dollars.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported By William Wolff

Mr. Porkoney, of Bushnell's Portland studio, now runs about in an Overland.

Ben Markham is still increasing in weight. Has put on two more pounds.

Fishing season opened in Oregon, April first. You can look for some trout pictures from Ray Winters, of the Multnomah Photo Supply Company, from November on. Ray is some fisherman.

Clarence De Fries, manager of the Davies Studio, Portland, showed the writer the town on his last visit there.

Have you joined the Photographers' Association of America? All professional photographers should do so. Dues for 1916 are now in order.

Sam Hill, of Bushnell's San Francisco studio, made a flying trip to Los Angeles recently. His mother-in-law passed away.

Seattle and Portland are both very dry. The writer visited both cities the first part of April and there was no rain in either place.

Mr. Bushnell has bought out Mr. James' interest in the James & Bushnell Studios in Seattle and Portland.

Farm Scenes Wanted

In the Editorial Department of our March issue, we called attention to the fact that Harry F. Blanchard, himself a successful producer of pictures of farm scenes for agricultural papers, has demands for quite a number of such pictures that he cannot supply. In that paragraph, to which we would refer the reader, it was specified that such pictures should be 5x7 or larger. Mr. Blanchard has just advised us that he has purchased a high-grade enlarging outfit with which he can make, from small kodak films, suitable enlargements equal to contact prints, and therefore the restriction as to size is withdrawn. He desires to purchase good, clear film negatives of farm scenes, dogs, horses, cows, landscapes and the like, having human interest or story-telling qualities, and our readers having such nega-

tives will do well to send him proofs from which he can make a selection and make an offer for the purchase of such of the negatives as he may wish. Mr. Blanchard's address is 65 Hudson Street, South Glens Falls, New York, and we can assure our readers that while he may not be in a position to pay fancy prices, our readers can be assured that he will be found perfectly reliable and trustworthy.

"The Illumination of the Field of a Photographic Objective"

The above is the title of a reprint of a paper by H. C. Lord that appeared in Vol. LXXVI, No. 3, of *The Monthly Notices of the Royal Astronomical Society*. This paper, with its illustrations, is a valuable and instructive one, containing formulas that can be applied over a wide field. Mr. Lord advises that he will be glad to send copies of this paper gratis as long as the supply lasts. All that is necessary is to address a request to H. C. Lord, Director, Emerson McMillin Observatory, Ohio State University, Columbus, Ohio; and, while Mr. Lord does not ask that it be done, our readers can hardly do less than enclose a stamp with their request in order that his kindness may not be made too burdensome.

A List of Plate Speeds

We have just received from G. L. Harvey, manufacturer of the Harvey Exposure Meter, 105 South Dearborn Street, Chicago, a new list of carefully compiled plate speeds that should add very greatly to the usefulness of this popular meter. Mr. Harvey has also gotten out a little folder that goes very thoroughly into the matter of motion picture camera exposures, and such of our readers as are interested in or contemplating the use of a motion picture camera, should send for a copy of this folder. With the information that it gives, the various tyros in motion picture work should find no difficulty in the overcoming of that bugbear of correct exposure in making motion picture film.

NOTES AND COMMENT

The 1916 Kodak Advertising Contest

In their announcement of the 1916 contest for pictures for illustrating Kodak advertising, the Eastman Kodak Company advise that cash prizes to the amount of three thousand dollars will be awarded as follows: First prize, one thousand dollars; second prize, five hundred; third prize, three hundred and fifty; fourth prize, two hundred and fifty; fifth prize, two hundred; sixth prize, one hundred and eighty; seventh prize, one hundred and sixty; eighth prize, one hundred and forty; ninth prize, one hundred and twenty, and tenth prize, one hundred dollars.

Quoting from the announcement: "The backbone of our national magazine advertising is based on photographs that we receive through these annual competitions, pictures that tell of the charm of picture making by the simple Kodak method.

"These pictures are not necessarily pictures made with Kodaks, but are pictures showing Kodaks or Brownies in action, pictures that suggest the delights of amateur photography.

"They are not for sample print work, but are for illustrating advertisements, are for use in telling the story of the witchery of Kodakery.

"The use of photographs as illustrations in advertising is growing steadily, rapidly. For the photographer who goes thoughtfully and carefully at it, there is good money in making such pictures. There is a growing market. Our competitions offer to the photographer an interesting way of taking up such work. And the prizes are well worth while."

The terms governing are as follows:

"1. Each picture is to contain a figure or figures and is to be suitable for use as an illustration in advertising the Kodak or Kodak system of amateur photography.

"2. Pictures may be of any size, but as they will often be reproduced in large size, large pictures will, everything else being equal, be given the preference.

"3. PRINTS ONLY are to be sent for competition—not negatives.

"4. Prints must be mounted but not framed. Mounts should show about one-inch margin.

"5. The winner of the first prize shall be awarded no other prize and no competitor shall be awarded more than two prizes. This does not prevent a competitor from entering as many pictures as he may desire.

"6. Due and reasonable care will be taken of all non-winning prints and, barring loss or accident, they will be returned to their owners at our expense, but we assume no responsibility for loss or damage.

"7. The negatives from which all prize-winning prints are made are to become the property of the Eastman Kodak Company, and are to be received by it in good order before payment of prize money is made.

"8. Contestants who are awarded prizes must also furnish to us the written consent of the subject (in case of a minor, the written consent of a parent or guardian) to the use of the picture in such manner as we may see fit in our advertising, as per the following form, which will be furnished on application:

".....

"For value received, I hereby consent that the pictures taken of me by..... proofs of which are hereto attached, or any reproduction of the same, may be used by the Eastman Kodak Company or any of its associate companies for the purpose of illustration, advertising or publication in any manner.

"This form for a minor:

".....

"I hereby affirm that I am the (parent/guardian) of and for value received, I hereby consent that the pictures taken of (him/her) by....., proofs of which are hereto attached, or any reproduction of the same, may be used by the Eastman Kodak Company or any of its associate companies for the purpose of illustration, advertising or publication in any manner.

".....

"9. All entries should be addressed to Eastman Kodak Company, Advertising Department, Rochester, New York. Entries from Canada should be sent to the Canadian Kodak Company, Toronto, Canada.

"10. In sending pictures, mark the package plainly, 'Kodak Advertising Contest,' and in the upper left-hand corner write your own name and address. Then write us, addressing 'Advertising Department,' and advise how shipment was made, mail or express, date, etc., and tell how many pictures you are sending.

"11. The name and address of the competitor must be legibly written on a paper and enclosed in a sealed envelope in the same

package in which the prints are forwarded. There is to be no writing on prints or mounts.

"12. We will promptly acknowledge the receipt of pictures, and when awards are made, will send each competitor a list of prize winners.

"13. This contest will close November first, 1916, at Rochester, New York, and October twentieth at Toronto, Canada."

The following suggestions are made: First of all, it should be remembered that these prizes are not offered for the sake of obtaining sample prints or negatives made with our goods. Merely pretty pictures, merely artistic pictures will not be considered. The pictures must in some way connect up with the Kodak idea—must show the pleasure that is to be derived from picture taking, or the simplicity of the Kodak system, or suggest the excellence of Kodak goods. Must, in short, help to sell Kodak goods, by illustration of some one of the many points in their favor.

"The jury, which will consist of photographers and of advertising men who are fully competent to pass upon the work submitted, will be instructed to award the prizes to those contestants whose pictures, all things considered, are best adapted to use in Kodak advertising.

"As reproductions of the pictures will often be in small sizes, too much detail should not be introduced.

"Pictures for reproduction should be snappy—vigorous, for they lose much by the halftone process.

"Where apparatus is introduced, it must be up-to-date. If you haven't the goods, you can borrow. Apparatus should also be in keeping. A 3A Kodak in the hands of a child is not a convincing combination.

"It is highly probable that we shall want to secure some negatives aside from the prize winners. In such cases, special arrangements will be made."

Some Fine Prints

We have recently had the pleasure of inspecting some very fine examples of portrait work printed on Japine Silver Paper, for which the well-known firm of Willis & Clements, 1814 Chestnut Street, Philadelphia, are sole American agents. These prints are of such a high quality and of such a pleasing tone that we feel sure our readers will make no mistake in placing an order for enough

to give it a fair trial and assure themselves of the special merit which it has. The directions for working the paper are not complicated, and as an inexpensive toner, supplied by the manufacturer, is used instead of a developer, there seems to be an advantage presented in that direction. Our readers are advised to look up the advertisement in this issue, or write the address given above for prices and particulars should their dealer not have the paper in stock.

An Artistic Exhibition

Francis Bruguiere, whose striking and artistic night scenes of the Panama-Pacific International Exposition won such high praise from the public and such marked appreciation from the publishers of some of our best magazines, is holding an exhibition of his work made at the San Diego Exposition. This exhibition, from April tenth to twenty-second, inclusive, is being held in the Paul Elder Art Rooms, 239 Grant Avenue, this city. The work shown is exceptionally fine and has more than usual interest from the fact that it is distinct and individual in treatment without resort to any of the usual cheap methods so often employed. Mr. Bruguiere takes to his work an appreciation of the artistic possibilities of his material, an appreciation that can be made available to the full by reason of his skill as a photographer. The work shown is so different from the usual photographs of the Exposition that one can hardly believe them to have been produced by the same means, the lens and camera.

Two Magazines Combined

The American Photographic Publishing Company, 221 Columbus Avenue, Boston, announces that, beginning with the May number, its two photographic magazines, *American Photography* and *Popular Photography*, will be combined and issued under the first title. The bibliographical history of this combination is as follows: The *American Amateur Photographer* was established in 1889; the *Camera and Dark Room* was established in 1898, and these two magazines were combined January, 1907. The *Photo Beacon* was established in 1889, under the name *The Beacon*, and consolidated with the previous combination in June, 1907, under the name *American Photography*. *Camera Notes* was established in 1897 as a quarterly, and con-

NOTES AND COMMENT

solidated with *American Photography* in 1909. *Popular Photography* was established in 1912; with this was combined, in 1913, *Photographic Topics*, which had been published since 1902. *Anthony's Photographic Bulletin* was founded in 1870; the *Photographic Times* in 1871; the two were combined in May, 1902, as the *Photographic Times Bulletin*, and this magazine, under the name of *The Photographic Times*, was merged in *Popular Photography* in January, 1916. The combination about to be made therefore represents no less than eight separate photographic magazines, each of which had a prosperous existence for a number of years. The May edition of *American Photography* will be nineteen thousand, giving it a circulation exceeded by very few trade or class magazines in the United States.

The Sewell Exhibition

The Sewell Prints Exhibit in the Liberal Arts Palace was a revelation of the advance photography has made as a real art. Mr. Sewell has been "hiding light under a bushel" for so long that few of us realized that he had really taken rank as one of our leading photographic artists. His exhibit was awarded the Medal of Honor, the highest award given in its class. Mr. Sewell is now showing his work at 233 Post Street, where we had the privilege, last week, of reviewing some of his new work that is fascinatingly beautiful, including examples of practically every subject possible to portray by photographic art. He certainly is one of the most versatile photographers that have ever come to our notice and he is entitled to a financial success equal to the one he has attained as an artist. We hope soon to offer our readers a few reproductions of this work.

Buy a Used Camera

David Stern Company have a full-page announcement in the front advertising section of this issue, and as this firm has been long and favorably known to us as absolutely trustworthy and reliable, we would suggest that the present is an excellent time in which to send in the coupon part of this advertisement and find out what can be done in the matter of improving one's outfit for the new photographic season just opening. We have carried the advertisement of this firm for a long period, during which time there has not a single complaint reached us; in fact,

quite a few of our readers have written telling us of the satisfaction they have derived from dealing with this firm. Chicago is one of, if not the largest market for photographic goods in this country, and for that reason one can, in dealing with a firm like this, feel assured that he is buying in a market where competition and large opportunities assure fair treatment and the lowest possible prices. A letter addressed to David Stern Company, 1047C West Madison Street, Chicago, will bring information concerning prices and conditions of good used or second-hand cameras of almost any description that one may desire.

New Wollensak Catalogue

This new catalogue, in addition to giving full particulars concerning the different lenses and shutters making up the well-known and popular Wollensak line, contains much valuable information as to lens terms, the selection of a proper lens for certain work, distance required for image of given size, and the like. In addition, it is handsomely illustrated with examples of photographic work by many of the leading photographers of the country. All in all, it is a very fine catalogue, and our readers should secure a copy either from their dealer or by addressing the Wollensak Optical Company, Rochester, New York.

The Illinois College of Photography

Miss Byrtha Sprotberry, of 1913, is now employed in the B. Frank Moore Studio at Cleveland, one of the best in the country.

William C. Matthews, of Berkeley, California, has been placed in charge of the photograph and the illustrative drawing at the University of California.

Roy M. Webster, of Moline, Illinois, who has been specializing on both commercial photography and courtship for some time past, was married last month to Mrs. Marie Braun, of this city. They will make their home in Moline when the groom has completed his work here.

During the past month the College management has installed a Bausch & Lomb Baloptican, which will be used for demonstrative purposes. One of the novel features of this instrument is that it permits an actual demonstration of retouching or etching to be projected upon the screen at the same time the actual work is being done on the negative.

CAMERA WANTS

Advertisements of the above nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted free. No business advertisements accepted.

FOR SALE Ground floor studio located at Oxnard, Cal., in a rich farming valley with a population of 3,500 to 4,000; 6 other towns to draw from. Doing a good business; reason for selling, going East. For further particulars address W. E. Detrick, Oxnard, Cal.

PHOTO SUPPLY Business in San Francisco for sale. Has Eastman Kodak agency. Long lease and low rent. Will sell half interest or entire business. Address, Box 40, care "Camera Craft," San Francisco, Cal.

10x12 GUNDLACH Rectigraph lens, newly fitted with Iris diaphragm; list, \$60.00; will sell for \$25.00. N. C. H., care "Camera Craft," San Francisco, Cal.

STUDIO FOR SALE California coast city of 4,000. Good equipment, top and side light. Doing a nice little business; low rent, high-class work. Price \$650.00. Address J. S. C., care "Camera Craft," San Francisco, Cal.

CINEMATOGRAPHER Young man with wide experience in outdoor, commercial, finishing and other branches of photography and several years' experience as motion picture cameraman, open for position. Have own complete professional motion picture outfit and produce results. Would consider position in commercial or portrait studio in locality offering a field for commercial motion picture work. Reasonable salary. References exchanged. Address Cinematographer, care "Camera Craft," San Francisco, Cal.

TRADE OR SALE An I. C. A. Vest Pocket camera with anastigmat lens, high-grade Compound shutter, 12 plate holders, and Eastman developing tank; to trade for a long-focus 5x7 camera and outfit, Korona or Empire State preferred; or for a good enlarging outfit. Or will sell for \$35.00. N. R. Piper, Angels Camp, Cal.

FOR SALE New York studio outfit complete, camera 8x10, has 5x7 Automatic attachment, two 5x7 plate holders. Can furnish Voigtlander lens if desired. All in first-class condition. Hoffman's Studio, Santa Barbara, Cal.

FOR SALE One No. 3, 16-inch focus Wollensak Vitax Portrait lens, fitted in Studio shutter style "B," slightly used, good as new, for \$85.00; list price \$137.00. W. Schiller & Co., No. 6 South Broadway, St. Louis, Mo.

FOR EXCHANGE Nichols portrait flash outfit, complete, good as new; want 4x5 Hall Mirror or any good reflex camera. L. Loney, Hartford City, Ind.

FOR SALE 2 1/4 x 2 1/2 Icarette film camera, anastigmat lens f.8, Compound shutter, No. 2 Brownie enlarging camera for negatives; both new cost \$30.00, price \$20.00. Charles Fisher, 131 Walnut St., Reading, Pa.

FOR SALE An up-to-date studio in good Colorado town of 5,000 population. I am interested in the auto business, good opportunity. A snap, \$450.00. Address H. B., care "Camera Craft," San Francisco, Cal.

POSITION WANTED By an all-round view and studio photographer, age 24, have four years' experience. Prefer a location in place of high altitude. Would work on percentage basis. Address C. A. B., Y. M. C. A. Bldg., Fresno, Cal.

POSITION WANTED In an up-to-date studio in a live town. Or will lease or buy the business if rightly located. Can handle any part of the work. Address D. L. Shrode, Tillamook, Ore.

BARGAINS Camera stand and 8x10" camera equipped with good Darlot lens, also 8x10 view outfit, complete except lens. Several other photographic items. R. P. Ross, Box 876, Sioux City, Iowa.

FOR SALE Fine 8D Dallmeyer, almost new, cheap—would sell on installment plan if necessary. Ralph J. Golsen, 5123 Kenmore Ave., Chicago, Ill.

FOR SALE Photo studio in good Southern California town of 40,000; will invoice \$2,500.00; will sell reasonable for cash; established 7 years; not a run-down place, but a money maker for any one. If you cannot show some cash, do not bother me, as the place is too big a bargain to spend time in writing. Full information to those meaning business. Address B. F. G., care "Camera Craft," San Francisco, Cal.

FOR SALE Kodak and stationery store (Eastman agency), center of city of Los Angeles, Cal. Established 10 years, business will average \$10,000.00 per year. Wishing to dissolve partnership, will make a sacrifice for quick sale. The Camera Shop, 226 Mercantile Place, Los Angeles, Cal.

FOR SALE Well-equipped studio, A1 location, best town in the valley. Reason for selling, have other interest in other business. For particulars, address W. F. Bierhans, 924 10th St., Modesto, Cal.

FOR SALE 8x10 view camera and 3 plate holders, in good condition, \$10.00. 5x7 folding Premo with Turner Reich convertible anastigmat lens f-6.8, 3 plate holders, tripod and case, for \$40.00. 20-inch focus R. R. lens, cost \$85.00, for \$25.00. H. Herdemann, 1809 Pleasant St., Cincinnati, Ohio.

WANTED 3A Eastman Kodak. State condition and price. W. F. Lesley, Lock Box 381, Moscow, Idaho.

3A ROLL FILM SENECA Fitted with Wollensak series I, f-6.3, Velostigmat, in Optimo shutter. In new condition, worth \$50.00, sell for \$30.00. Will ship C. O. D. subject to inspection. W. Cab, 5138 N. Claremont Ave., Chicago, Ill.

WANTED TO BUY Photo studio in town of 10,000 or 15,000, in California, or will rent furnished or run studio on shares, coast town preferred. Photographer, 336 W. 52d St., Los Angeles, Cal.

NEW LENSES For sale, Cook 13-inch Process, Goerz No. 7 and No. 5 Dagor; bargains. C. A. Bailey, Cromwell, Conn.

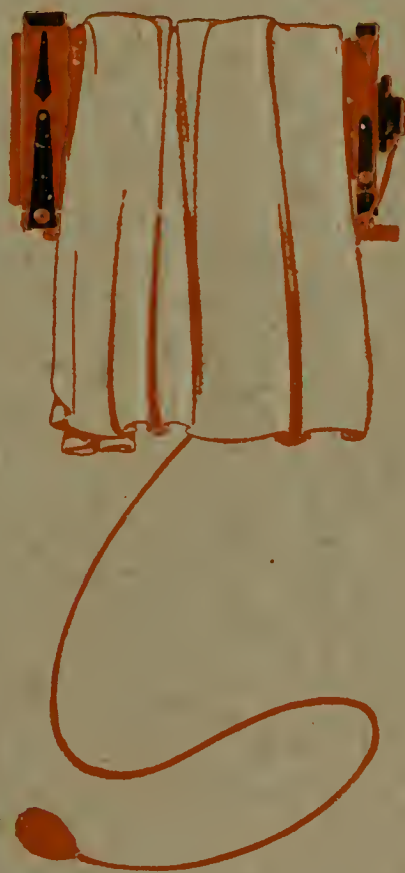
POSITION WANTED As all-round assistant in good studio, 8 years' experience in all branches of the work, single. Write W. T. Arend, Box 107, Baroda, Mich.

PARTNER WANTED Good live home portraitist, lady or man under 40, can have half interest in best small studio in Los Angeles, average \$12.00 dozen. Capital required, \$850.00, fully secured. Krauch Studio, 444 South Broadway, Los Angeles, Cal.

WANTED Set of ten volumes Complete Self-Instruction Library of Practical Photography, in good condition. State binding and lowest cash price. R. M., care "Camera Craft," San Francisco, Cal.

BIGGEST BARGAIN 3A Ingento new roll film camera, R. R. lens, flex shutter with wire release, rigid U front, fine leather covering, \$22.00 value, price \$12.00. Will ship C. O. D. subject to inspection. W. Cab, 5138 N. Claremont Ave., Chicago, Ill.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA

The Price of Quality

Even a manufacturer of writing paper makes this statement in his advertisements:

“The cost of fine rag stock bonds has been forced so high by shortage of raw materials that some substitute must be found for them.”

No substitute is possible for *high grade* photographic papers, and in spite of the high cost of raw materials

Cyko Paper

is coated on the same high grade stock which for years has been the basic element of its superiority. Gelatine has soared sky high, silver is advancing steadily, yet the list price of CYKO remains the same, hence the saying: “When you pay list price for Cyko you get the highest grade photo paper for less than it costs to manufacture.”

AnSCO-Company

Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

Entered at the Postoffice in San Francisco as Second Class Matter. Copyrighted, 1916, by Camera Craft Publishing Co.

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. **Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. **New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. **Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

Subscription Price, \$1.00

Canada, \$1.25

Foreign, \$1.50

FOREIGN AGENTS:

Argentina	Juan Grant & Son, Buenos Aires
Australia	Harringtons, Ltd., Sydney
Canada	Kodak Australasia, Ltd., Sydney
England	United Photographic Stores, Ltd., Montreal
Mexico	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
New Zealand	Calpini y Cia., Mexico City
Philippine Islands	H. J. Jones & Co., Ltd., Wigananui
Japan	Squires, Bingham & Co., Manila
	K. Kimbei, Yokohama

We claim your
patronage because
we serve you well



Hirsch & Kaiser

218 Post Street

San Francisco



A WINSOME MAID
By R. G. BATEMAN
COMBINED DAYLIGHT AND
HALLDORSON FLASH LAMP



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

JUNE, 1916

No. 6

A Profitable Field

By R. G. Bateman



With Illustrations by the Author



EASY WITH HALLDORSON LAMP

THE profession of photography is probably overcrowded in its regular lines, but to the enterprising young man with but little capital who is willing to strike out along new and unbeaten paths, it offers more opportunities than are found in any other field of activity. This, too, without encroaching upon those who are already in the business. The country abounds in small villages and even towns of considerable size which have no resident photographers. Such towns are too small in themselves to support a photographer, and to maintain a skylight studio in such a town with the idea of making periodic visits on certain dates, costs too much to permit of making the business pay.

In proportion to their population, these communities are rich in photographic possibilities; and, if the business could be profitably handled by

periodic visits of, say, two or three days each month, a circuit of such towns could be made to yield a very profitable and interesting business to any one enterprising enough to work it up. Profitably handled means, as the reader can guess, without the expense of maintaining a skylight. Furthermore, an established photographer in a town of moderate size can, avoiding this expense, materially increase his business by making up a circuit of neighboring villages to be visited at stated intervals for two or three day periods at a time.

Until recently it has been considered impossible to make portraits successfully without a skylight; and, on this account, when a photographer attempted to conduct a chain of small-town studios, he felt compelled to either himself build a studio or have a building owner install a skylight for his special use in some unused building, in each such town. In most cases this involves greater expense than the prospective business warrants; and, as a result, many of the small towns throughout the country are visited only occasionally by an itinerant photographer. Happily, the condition responsible for this situation in the past has been changed by development in the use of flashlight. It is no longer necessary to have a skylight, or even electricity, in order to make successful portraits. With a folding flash lamp of the style shown in the accompanying cut, a photographer can make as good portraits as by daylight, doing so in any room large enough to accommodate the lens distance of his camera.

In starting such a business as I have suggested, the best plan is to first make a survey of the towns in one's locality with a view of choosing five or more of the most promising of those that have no resident photographers. Their location with respect to each other, as to distance apart and travel convenience between them, is quite important, for the cost, in both time and money spent in going from one to the other, becomes one of the fixed expenses of such a business. Having located the towns, the next thing is to arrange for an inexpensive and convenient place, in each, where the work can be done. Local conditions will determine this to a large extent. In one place arrangements may be made to share an office with some one permanently located, using a vacant room elsewhere in the building for operating purposes. In another, a vacant store building may perhaps be rented at small cost. If neither of the above arrangements can be made, one can nearly always make a studio out of the local hotel. It will be found but little trouble to secure the use of the parlor or sample room for operating purposes, and the office will do very well for a reception room. Advertising can be done through the usual channels; in the local paper, by cards and signs hung in conspicuous places, by show-frames in front of the selected place of business or in the postoffice, and by distributing hand bills.

It is surprising how little equipment is necessary for conducting such a business successfully. The portraits that accompany this article were made with the instruments shown in the illustration herewith, the room being only thirteen and one-half feet square, shown unfurnished in one of the illustrations. The equipment used was as follows:

A PROFITABLE FIELD



TWO SIDES OF ROOM USED AS STUDIO



THE EQUIPMENT USED

No. 2, 8x10 Eastman View Camera.....	\$30.00
F-8 Somerville Lens, 17-inch focus, second-hand.....	10.00
Crown Tripod	5.50
Packard Shutter	4.00
No. 2 Halldorson Home Portrait Flash Lamp.....	30.00
Halldorson Home Portrait Reflector.....	8.00
Plain Black Background.....	3.50
Wall Paper Panel.....	1.00
Posing Stool	1.00
Grass Rug as shown.....	4.50

\$97.50

Most photographers will have an 8x10 view camera with lens and tripod that is suitable for this work. While it is desirable to have a rapid lens, it is not necessary, as a good one working at f-8 or larger will answer very well. It should be at least ten inches focus and may be as much as seventeen if size of room permits. It should be remembered, in this connection, that the chief advantage of a more expensive lens is in its speed, and with flashlight this is important only in saving powder. A good plan is to start with inexpensive lenses if necessary and secure good ones as the business becomes large enough to justify their purchase. Almost any background will do for this work, but one made of plain red or dark cloth, one that may be hung in folds like a portiere on a rod, is most suitable because it can be packed with the least bulk. The floor cloth need be nothing more than a heavy, dark cloth that lies flat and unwrinkled where placed.

In choosing a room for operating, one has, aside from location, only to take account of its size. One 12x14 is large enough if the door is so situated that the camera can be backed into the hall or into an adjoining room when groups of over five or six persons are to be made. Its size depends, of course, upon

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the focal length of the lens. The longer the focal length, the larger the room required. As a rule, the above size will be ample. It is desirable to have at least one window to be used as an auxiliary light, as thereby a greater variety of lightings can be secured with a corresponding degree of interest given the pictures. Even though the window be small and the light partially obstructed by a neighboring building, it will give sufficient illumination for use in combination with flashlight.

For the benefit of readers who have not used flashlight in the modern way, a few words of explanation will be in order. To use the open flash in the old way is much the same as if one took the subject out of doors and tried to make a portrait by direct sunlight. Making flashlight portraits by means of a modern lamp such as the one shown in the illustration is an entirely different matter. The flash takes place within a bag that serves the double purpose of diffusing the light and trapping the smoke. Furthermore, the lamp is so designed as to direct all the light forward upon the subject instead of allowing it to scatter in all directions and be reflected back from every angle of the room.



PORTRAITS MADE IN ROOM WITH EQUIPMENT AS SHOWN

Where electricity is available, the use of "proof-lights" makes it possible for the inexperienced operator to see in advance exactly how the lighting on the subject will look in the finished picture. These lights consist simply of electric globes screwed into sockets inside the bag. As they are kept burning, even during the flash, they give the proper size to the pupil of the eye. This latter

A PROFITABLE FIELD

advantage may be had, however, without them, by keeping the operating room reasonably well lighted. The object of course is to catch the pupils of the eyes at the size which shows them to the best advantage. In a dim light the pupils enlarge and the flash alone has no appreciable effect in contracting them, for the exposure is recorded before the muscles have time to react. Strong daylight too greatly contracts the pupils, giving, under such conditions, pictures in which



EXAMPLES OF PORTRAITURE MADE IN ROOM SHOWN

the eyes look faded and weak. By using proof-lights or keeping the operating room moderately lighted, pictures will be secured in which the eyes have a lustre and brilliancy such as cannot be secured by any other kind of light.

When using small charges of powder as in making ordinary portraits, about three exposures can be made without emptying the bag, but in such cases the powder must be slightly increased for the second and again for the third exposure, because the smoke already in the bag cuts down the light a little. A handle permits the top to be lifted from the stand and carried outdoors, where pressure upon the bag forces the smoke out through the door at back.

To make portraits with a lamp such as this is easier and requires less experience than necessary in working by daylight. To secure enough daylight for portrait work, a large skylight is necessary, and to manipulate this great volume of light to secure a given end requires no little skill and practice. Daylight varies from hour to hour and from day to day, making every exposure an independent problem to which no rules can be applied. With a flash lamp the light comes from a comparatively small source and one that can be easily moved about. This makes it a very simple matter to change the angle at which

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the light strikes the subject, and by using a reflector, the proper balance of light and shade is easily secured. Powder does not vary; and thus, after a few preliminary experiments, proper exposures are given almost automatically.

The beginner has only to learn a few simple principles in order to work as well as does the most experienced operator. He must know first of all that the illumination decreases very rapidly as the light is moved away from the subject. For example, if the distance be doubled, the illumination of the subject is only one-fourth what it was at the nearer distance, as the illumination or strength of the light varies inversely as the square of its distance. This simply means that if a given amount of powder is required at, say, four feet distance, four times as much powder would be required with the lamp at a distance of eight feet. As to lens stops, the same rule applies as by daylight. When the stop is changed from f-8 to f-11, one simply doubles the amount of powder. It is of course advisable to use the lens at the largest opening that will give the desired definition, for in this way powder is saved. With lens stopped f-6.3 and lamp



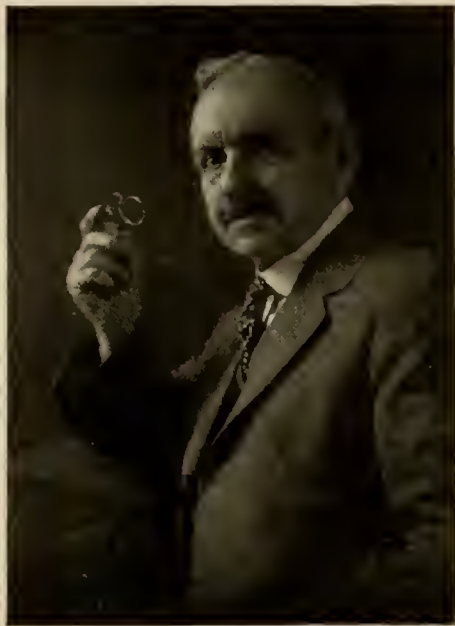
FLASHLIGHT PARTICULARLY SUITED TO THIS CLASS OF WORK

at about four feet from subject, about five grains of Victor Fast Powder will give correct exposure. This means that with lamp eight feet away, using same stop, one would have to use about twenty grains of powder.

The lamp should stand at a height which gives the light an angle of approximately forty-five degrees. To secure this angle, set the lamp at a height

A PROFITABLE FIELD

that is nearly as great as its distance away from the subject. For busts this distance should be from three to four feet, for two-thirds figures about six feet, and for full figures and small groups from eight to ten feet. Place the lamp to one side and far enough in front of the subject so that the light falls strongest on the nearest cheek bone when the face is turned toward the camera. A white cloth reflector, at least $3\frac{1}{2} \times 6$ feet in dimensions, should be used to reflect back



EXAMPLES OF HOME PORTRAITURE MADE WITH THE HALLDORSON LAMP

enough light into the shadow side to give detail in every part. If one such as is shown in the illustration is not available, a suitable one should be extemporized, as it is a very important factor in producing good work.

The ghastly and blocky effect that is sometimes secured with flashlight comes from insufficient exposure due to too little powder being used, throwing the light almost straight from the front and not using a reflector. This last gives a blocky effect with the high lights breaking off abruptly into deep shadows at the side of the face and under the chin. The reflector gives the proper gradation between the light and shade, and gives roundness to the face and figure. With a suitable lamp, proper exposure and the lighting regulated by the reflector, the flashlight picture has a quality that is obtainable only under the most favorable daylight conditions. When we consider the great variety of lightings made possible by using the flash in combination with daylight, it is plain that this form of lighting has a great advantage over daylight alone.

These combination lightings, although simple and easy to make, are more difficult to learn than are straight lightings, introducing as they do the variable quality of daylight. However, as the conditions that make combination lightings possible are present in any room having one or more windows, the worker should give them thought and attention. The commonest form of such lighting

is made by placing the subject with the window on one side and the flash lamp at considerable distance on the other. Two bulbs must be used, one for setting off the flash and the other for opening the shutter. The object is to use the daylight for the main light and the flash for getting detail and texture in the shadows. The daylight exposure must be long enough to give proper tone to the high lights of the face and figure, and then, just before closing the shutter, the flash is fired, using enough powder to give detail in the shadows. The amount of daylight needed for such work is very small, for the shadows are taken care of by the flash. Any window will do, but of course the larger it is the shorter will be the exposure necessary.

The variety of lightings that may be obtained by carrying out this combination method in its numerous phases is well nigh unlimited. The popular brush light, which leaves the face in luminous shadow except for a brush of strong light on one side, is very easily obtained in this way by placing the subject between the window and the camera, but enough to one side so that the full strength of the daylight will fall on one side of the face.

But the most novel and beautiful effects may be obtained by using the window as part of the background and taking the subject directly against it. If the window in your operating room is not finished to make it attractive enough for this purpose, a slight altering will make it suitable. Curtains simply but artistically hung will do much toward this end. With a little practice, work of this kind can be done so well that the buildings across the street will appear in correct tone but in hazy outline. The reason for such easy success by flashlight lies in the fact that the required daylight exposure is so short that little or no halation results, while the flash illuminates the camera side just enough to destroy the excessive contrasts that usually abound in such pictures.

The great variety and beauty of lightings that may be obtained under the conditions described above make it no longer necessary for photographers to depend upon daylight in this portrait work. The flash, properly handled, gives results that are every bit as good in quality as those made by daylight. Furthermore, the flash is far easier and more convenient to handle. With it, portraits of the highest quality can be made in any ordinary room without a skylight.

Some may hesitate to use flashlight in this way through fear that the public cannot be induced to patronize a studio depending upon this method of illumination. However, while it cannot be denied that a portion of the public is prejudiced against flashlight, when used in the old-fashioned way, the public is, quite fortunately, concerned only with results and will never stop to consider whether the photographer has a skylight or not, provided he shows and delivers good pictures. To the public one need only refer to his lighting arrangements as being the latest and most modern form; and, strange to say, even prejudice will be changed to admiration when flashlight portraits are made under these conditions. One can, if he wishes, explain that there will be a slight flash, and after the first exposure the sitter will marvel at the simplicity of your process. They at once recognize the fact that all the disagreeable features of flashlight used in the old way have been eliminated.



Copying-Photographing Small Objects

By H. D'Arcy Power, M. D.



With Illustrations by the Author

In the last number of *CAMERA CRAFT*, the improved form of my vertical enlarger was described in full detail and its use for various purposes besides enlarging pointed out. Among these, copying and small object photography were referred to with a promise of more details later. In this article I will explain how the enlarger can be used for work that is often extremely difficult of successful performance with the average photographic apparatus of the amateur or professional.

The copying of manuscripts has already been dealt with, but it is sometimes necessary not only to secure details, but also to have that detail absolutely identical in size with the original object. Theoretically, it would be possible to do this by placing the object to be copied and the negative plate each at a distance of double the focal length of the lens; thus, with a five-inch lens, an object placed at ten inches from the lens should copy the same size on the plate situated ten inches behind the lens. But in practice this succeeds very poorly. To begin with, it requires that the negative used shall be as large as the object copied, which, in the case of manuscripts and pictures, might be extremely inconvenient. Secondly, it presupposes that the measurements be taken from the exact nodal point of the lens, which in different lenses is variously placed in reference to the lens surfaces, and this point is not easily located. Any departure from this will entail an image either too large or too small. There is, however, a method of reproducing natural size to the veriest fraction of an inch, which



OIL PAINTING AND SILVERWARE—Glass over former shows no reflection and silverware shows perfect rendering

can be carried out in this enlarger with the greatest of ease. If the object to be copied is placed in the lower compartment and photographed on a negative in the upper compartment, and then, when this negative is developed it be returned to the upper compartment, the illumination reversed and its projected image received on bromide or other sensitive surface, the lens in the meanwhile not



SHELLS, NATURAL SIZE—Left, two lamps used for contrast; right, four lamps used to secure detail

having been disturbed, it is obvious that as these positions are in exact conjugate foci, the image must be absolutely identical; and measurements will show that it is. I have not hitherto seen this method dealt with in works of photography, but its practical value is self-evident.

There are many cases in practice where exact technical rendering of small objects is of great importance. I need only refer to the illustrations in works on botany, zoology, geology and kindred sciences. The enlarger lends itself to the most perfect reproduction of small plants, insects, shells, fossils, etc. Take the case of flowers or plants. It is desired to illustrate a work at a given scale of reduction; let us say, in case of flowers, of one-half or one-fourth. The plant or flower is arranged in the lower compartment on the shelf marked for the required scale, the type of background to best bring out its character being used behind it. Generally speaking, it is better to employ a sheet of glass as the support in place of the regular wooden shelf. This permits the background to be placed below, which will entirely obviate the formation of shadows, giving an aerial background, the quality of which will depend upon the paper or card placed out of focus below or at the bottom of the apparatus. This last can be either a sheet of blotting paper for white backgrounds or black paper for dark-ground illumination, or any intermediate tint that may be desirable.

The lighting can be so arranged as to bring out preferentially any particular detail or to give an absolutely even illumination over the whole surface. The

COPYING AND PHOTOGRAPHING SMALL OBJECTS

four lights constituting the illuminating apparatus can be thrown into action, either by screwing them down in their sockets as required, or, as is better, by having them arranged in connection with push switches in front of the illuminating frame, which will permit their being thrown into action at the will of the operator. In this way, every part of the flower, shell or other object can be brought into the maximum of relief. The importance of control in lighting is illustrated by the examples of shells accompanying this article. These, together with the pictures of the daffodils, show the differing effects obtained by lighting from one, two and four lights, respectively. It may here be remarked that in dealing with certain small objects difficult to maintain in a given position, it will sometimes be a benefit to photograph them from their under side through the glass plate on which they rest. In this case they should be placed on a sheet of glass in the upper compartment of the cabinet, the light directed from below and the plate, of course, placed in the lower compartment. Again, it may be desirable to have an object placed obliquely in reference to the lens. This is

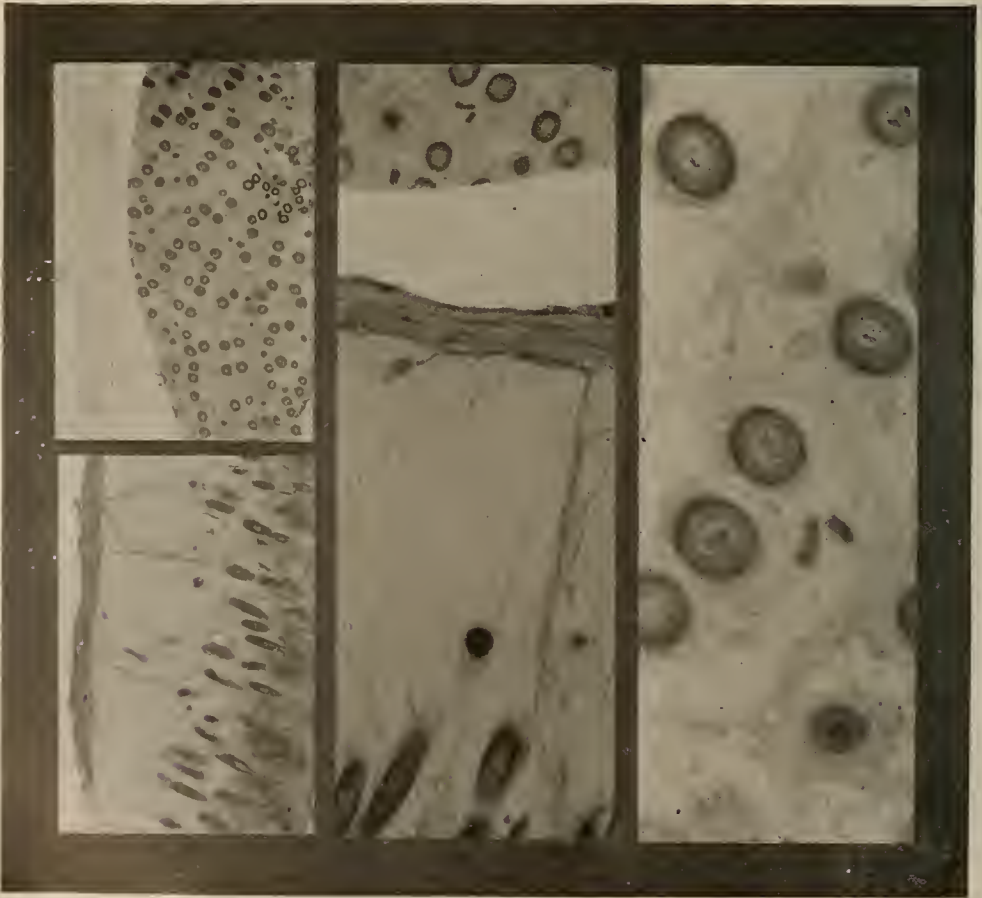


DAFFODILS, NATURAL SIZE—Left, one lamp used; right, four lamps used

readily achieved by using the small apparatus described in my last article as suitable for giving any desired angle of obliquity. But it is to be remembered that when pictures are taken for scientific purposes, any alteration of the plane of camera and object will introduce distortion. On the other hand, for esthetic purposes, the tilting frame may sometimes be found very valuable.

There are certain classes of subjects that are notably difficult to photograph,

and, among these may be mentioned silver and glassware, coins, and pictures under glass, and small parts of machinery such as watch works and the like. All of these I have, with the greatest of ease, succeeded in photographing with an entire absence of the distracting reflections or blurring that so frequently results. The subjects of this kind, herewith reproduced, were all photographed in the lower compartment of the enlarger with no special precaution beyond using, in some cases, a glass plate as a supporting shelf and seeing that possible reflections from the upper part of the apparatus were cut off by means of a blackened kit interposed between the object and the lens. I would advise any one using this camera to provide himself with several such kits or diaphragms, as they are easily made out of heavy cardboard. Their central openings should be cut to the shape and the size of the projected negative plate at the various levels from the upper to the lower part of the enlarger. The number of lights to be employed in copying coins, silverware, etc., can best be determined by observing their effect, either on the objects themselves as they rest in the lower compartment, or by their projected image as it appears on a piece of ground glass placed on the negative shelf. It will be found difficult to see the image



SECTION OF HUMAN SKIN—Enlarged ten, fifty and one hundred times, respectively

COPYING AND PHOTOGRAPHING SMALL OBJECTS



OLD, WORN COINS—Difficult subjects that are successfully photographed with the enlarger



ACACIA BLOSSOM, ENLARGED TEN TIMES



SHELLS, ENLARGED TEN TIMES

with the ground glass lying horizontally, but it can be studied with the greatest of ease by holding a piece of mirror behind it. Particular attention is called to the perfect detail in the picture of the silverware and the entire absence of reflections in the copied oil painting, the latter having a bright gold frame and the glass not removed.

Much has been written in the last few months, particularly in English journals, on photographing minute objects at an enlargement of up to ten or twenty diameters without the use of a microscope, and various arrangements for so doing have been featured. With my enlarger, the photography of microscopic sections, enlarged up to as much as a hundred times, and the microphotography of small solid bodies up to ten or twenty diameters, are a matter of the greatest simplicity. All that is required is that the lens used be of sufficiently short focus to give a considerable enlargement with the object at a reasonable distance below. For the mass of my work of all kinds, I am using a five-inch Zeiss Protar; to this I add a simple landscape lens of five-inch focus. This gives me a focus approximating three inches; which, when used pointed up from the lens board so as to bring it within a short distance of the negative, a distance that can be regulated by the extension rings previously described, enables me to get an image of twelve linear magnifications on shelf sixteen of the enlarger. I could exceed this, but for most purposes it is unnecessary. Sections such as those of the human skin, of small insects, water larvæ, cross sections of stems, are shown in admirable detail when projected in this manner. The negative so obtained, by being again enlarged in the same way, can be brought up to a magnification of over one hundred diameters, an example of such being shown. To one not having a microscope, a wide range of utility is made possible by the possession of an enlarger. Again, there are very many small objects whose details are perceived with difficulty by the unaided eye that can be enlarged to great advantage by reflected rather than transmitted light. In this case they are placed on a sheet of glass in the upper compartment, illuminated from below and the image received on a negative plate at the desired magnification. An example reproduced herewith shows a tiny acacia flower not more than one-quarter inch in diameter, while in another are shown some of the little rice shells, so well known here on the Coast, whose details would certainly escape observation by the unaided eye, but which are here brought out with perfect clearness.

No special precautions are necessary in the making of these microphotographs except that, where color is an element in sections or objects, the proper screen be used in conjunction with the lens, and that the plate be a panchromatic one. There are very many cases in which this is entirely unnecessary, but in others it means the difference between good detail and absence thereof. This, however, is part of the principles of general photomicrography, which need not be entered into at this time. I am experimenting with a method of producing high-power micrographs in this enlarger, but am not as yet prepared to give full and satisfactory details. I shall, however, be glad to explain any points covered in this or my former article that are not clear to any interested reader.

The Motion Picture Studio

By Frank B. Howe



Illustrations by the Author and Leading Studios

Decidedly different from anything preceding it, standing on its merits alone for success, and detracting not at all from any other institution in gaining that success, there has arisen an industry which does more for the entertainment, relaxation and general good of the large mass of the public than does anything else—the motion picture. Not in competition with the legitimate stage, but as a distinct and separate institution; lacking some of the advantages of the former, yet having advantages that the former does not possess; not fighting it, but co-operating with it, the motion picture has grown and expanded and improved until it stands today as the fifth greatest industry in the United States. The motion picture has brought to the masses what was previously not afforded them, and their quick appreciation of this fact has resulted in the phenomenal rise of this great industry. The motion picture is essentially an institution for every individual, in every walk of life, and of every class, and it is in the hope that the methods of securing the wonderful productions which we see today may be of interest, that this series of articles is written. In this we will try to explain the workings of a studio in general and follow in successive issues with more detailed discussions of Motion Picture Work by Daylight, Motion Picture Work by Electric Light, and The Making of Motion Picture Titles, illustrating with photographs which some of the studios and manufacturers have been kind enough to supply.

About eighty per cent of all motion pictures are produced in Los Angeles and for this reason this city is known as the center of the producing end.



MAIN ENTRANCE OR FRONT OF UNIVERSAL CITY—Copyrighted 1915 by Frank B. Howe although New York is the distributing center. In Los Angeles there are located some thirty-five moving picture studios of varying sizes and importance. Of these, the best known is probably Universal City, for the reason that it is the largest studio in this country and because it is open to visitors, who, as tourists, advertise and spread its fame by telling their friends, upon their return to their homes, how they saw moving pictures made. This is the studio of the Universal

Film Manufacturing Company, one company only, though there are some twenty-six stock companies, each of which may be making a picture at one and the same time, all engaged in making pictures for the Universal alone in order to fill their demands. The actors are used interchangeably in the different companies as the requirements of the pictures being produced demand. This system of employing several companies is followed in practically all of the studios, the only difference being that the Universal has the greatest number, sometimes creating the impression that it is a studio used by several producing companies, which it is not.

One reason for these articles lies in the realization that the studios, with the exception of the Universal and the Horsley, are not open to the public, and therefore the outsider rarely gets an opportunity to learn concerning the production of moving pictures. It is with the hope that this may be made a little clearer that these articles are written. To the minds of many, the writer included, this tendency of excluding the public is responsible, to a large extent, for the former non-support by Los Angeles citizens of their greatest industry—the motion picture. This antagonism is now being lessened by the efforts of a broad-minded City Council and the situation is rapidly becoming less strained. The question of admitting the public has long been a much-discussed one. Some of the producers contend that the presence of visitors tends to lessen good work, but as far as my own observation goes, the actors prefer, for the most part, having visitors, and do just as good or better work when they are present. The two studios that permit visitors, and one of them, the Universal, is the largest in the United States, do not feel there is any loss caused, and it certainly assists in educating the people in motion picture methods and shows them why they should reject that greatest enemy of the motion picture—censorship. Would you have your newspaper or magazine censored? Are you willing for one or two, or even a dozen people, to tell you what you may or may not see? Are you not able to be your own censor? This is not an argument against censorship, but if you are interested, write to the *Moving Picture World*, 17 Madison Avenue, New York, and they will show you why censorship is a menace to Americanism. There is not one argument made by censorship advocates that cannot be disproved.

However, as to the right or wrong of admitting visitors, the fact remains that studios generally are not open and they seem far from the point of welcoming the public as do other great industries. So, in the hope of giving the reader at least a vague idea of what is being done to provide his evening's entertainment, this series of articles is written.

Upon entering a studio, the first department encountered is usually the one having to do with the hiring of the players for the lesser parts of the pictures, the extras as they are called. These are engaged for a short time only, either for one or two days or until their services are no longer needed. To this department the director advises the parts to be filled and it must find the proper types or persons whose physical characteristics fit in with the requirements of the particular picture. As can easily be seen, the head of this department has no unim-

THE MOTION PICTURE STUDIO



EAST END OF UNIVERSAL CITY, SHOWING RANCH STAGE
MAIN PORTION OF UNIVERSAL CITY FROM HILLS AT BACK
WEST END OF UNIVERSAL CITY, SHOWING MAIN STAGES

portant position, as he must be able to secure the required types on short notice in order to avoid loss to the company through having principals on large salaries idle while proper types are being found for the lesser parts. For this reason, when an unusual type is found, his name, address, and characteristics are generally card-indexed so that he may be quickly secured when needed.

Costumes for all plays of the present day are furnished by the actors, but for plays of former times or other countries, the studio has to furnish them. Therefore, in the larger studios a costume department is maintained. Here are assembled most of the more commonly used costumes, ready made, while facilities are provided for making up those that are not on hand, when required.

In the property department will be found a wealth of furnishings that may be required in pictures, all articles such as pictures and bric-a-brac used for furnishing and decorating rooms, guns and revolvers for the actors, the tools of various crafts, in short, everything that can possibly be required in the making of pictures. A property department resembles a department store, as everything used at all commonly is to be found therein. It is interesting to watch the demands upon such a department. One man will come in to get a pin, while the next will want half a dozen rifles of the patterns used in the Civil War, and as likely as not the next will want a yard of ribbon. But they are all quickly

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and accurately supplied. Furniture galore of every age and pattern is to be found there and bric-a-brac of every description is especially plentiful. In connection there is usually a manufacturing plant for making such "props" as the property department might not have, well equipped to make such articles as would otherwise be hard to secure. Dealers in the antique, and second-hand merchants are frequently called upon in search of desired goods and purchases are constantly being made. This department is one of the most costly in the whole studio, for an enormous quantity of materials must be kept and more continually purchased. Like the costume department, as much as possible must be ready in order not to delay production.

In the scenery department will be found painters at work on new scenery exactly like that used on the legitimate stage. This is made by fastening canvas over wooden frames and painting the desired scenery thereon. By painting another scene on top of the old one, these can be used over and over again, yet an enormous amount of scenery has to be kept constantly on hand, and this is another expensive item. In the scene docks, which are nothing more than shelter so arranged that the scenery is made as accessible as possible with the minimum danger of damage, will be found all kinds of sets stored for future use. The carpenter shop is in continual operation building new sets, new equipment and repairing old, while setting up and taking down of platforms for the cameras and various temporary structures as well as the hundred and one other things that have to be built about a studio, engage its attention.

An important item is the space devoted to dressing rooms. These last are nothing more than rooms, generally arranged in rows, fitted up for the convenience of the actors in changing costumes and putting on make-up. Their accommodations and arrangement vary with the position of the actors who are to occupy them. The stars have commodious quarters fitted with every comfort and convenience, while the lesser players content themselves with less pretentious ones, although not without the necessary conveniences. The acme of dressing-room elaborateness was reached in the cottage, built in the Lasky studio yard, for the use of the famous grand opera star, Geraldine Farrar, during her work at that studio. This had every feature of a luxuriant apartment, including even a piano.



RANCH RESTAURANT, UNIVERSAL CITY
—This seats two hundred and is in addition to the larger one in main part of the city



RANCH DRESSING ROOMS—Plastered, electric lighted, and with hot and cold water; supplementing those in main part of city

THE MOTION PICTURE STUDIO

It has been found best to regularly employ a force of scenario writers rather than to depend entirely upon material offered from the outside, and so a scenario department is generally in evidence. The writers, who generally supply a certain number of scenarios per month, are in charge of an editor whose duty is to provide material for the various directors. Some of the writers work at the studio, while others merely turn in the required number of scenarios, working where they please. In addition to the regular writers, there are others who read the scenarios sent in from the outside and recommend either their purchase or rejection. In case of purchase, the manuscript is generally given to some writer for revision before passing on to the director for production.

The Lasky studio has an art director whose duty is to design all scenery or "sets" used in their production. In some of the studios, this is given attention by the director, but this company has added an expert at this line of work to its staff for the purpose of having artistic settings.

The title department produces the cards used in making various captions or "sub-titles" which appear on the screen during the picture to explain the course of various scenes and to make the action clearer. These cards are photographed in the same way as are the action scenes of the pictures and are made to form a part of the film just as do the latter. The Fine Arts Studio has a library containing books of reference and other matter regarding costumes and the like of other ages and other countries. This is in charge of an expert, who secures accurate historical data for the various directors in order that the details of the pictures may be absolutely accurate.

The laboratory is equipped with developing tanks, large drying drums and machines for printing the positive film. They also have facilities for developing and printing the "still" pictures taken at the same time as are the action scenes, and used for lobby display and similar purposes by the theaters. The air supplied to the laboratory is generally admitted through a "washer" to eliminate dust, and every precaution is taken to get perfect results. Tank development is used almost exclusively, the film being wound on large racks. After development, the film is fixed, washed and then wound on large revolving drums for drying. The positive film is then printed, after which it is developed and treated in the same manner. In the laboratory there is a dark-room in which the camera men load their film into the magazines, and there is also a vault for the safe storage of cameras. There is also a room in which the first made positive film is repeatedly projected before the director in order that he may cut and edit it until deemed of the proper length and otherwise satisfactory for release. The negative film is then cut and arranged to correspond with the editing done by the director and the required number of positives is made. In the assembling room the titles and the action film are spliced together and assembled ready to go to the exchanges to be rented to the theaters.

Such, in addition to the stages themselves, are the various departments required by a well-equipped studio contributing to the ultimate production of a film. Having catalogued these, we will pass on to the actual work of production and in the following articles I will take up the making of the picture itself.

A Method of Blue Toning

By John Bieseman

With Illustrations by the Author

A simple, practical method of toning prints on developing paper to a rich, clear blue gives one the opportunity of adding variety to his collection; and, if such toning is reserved for snow scenes, water views and like subjects, there will be given an added charm to many of the prints so treated. A blue flower in a clear glass vase, against a white background, should make an excellent



BETSY



BIDDY

subject for blue toning and frequently an ordinary landscape takes on a strong suggestion of illuminated delftware or of the decorations on blue tiles. If one will take a blue-toned print of some subject that responds to such treatment, and mount it behind a mask cut from ordinary blue blotting paper, then frame it under glass with a narrow strip of bluish-gray fumed oak, the result is almost certain to be pleasing in the extreme.

As in ordinary sepia toning, the prints intended for blue toning must be correctly exposed; that is, so exposed that full development gives the desired quality of print, preferably one not too deep, as the toner very slightly intensifies the image. Fixing and washing should also be full and complete or trouble will result. The toning bath is made by dissolving one and one-half drachms of ferric ammonium citrate in two ounces of water, then dissolving a like amount

A METHOD OF BLUE TONING



THE LAKE—MORNING

of potassium ferricyanide in another two ounces of water, and lastly mixing two ounces of ordinary acetic acid with twenty ounces of water, the three solutions being all mixed together, with rapid stirring.

As this toner is quite rapid in its action, only one print should be immersed in the bath at a time. As soon as the half tones assume a slight tinge of blue, it should be removed, at once well rinsed and then placed in a tray of clear water, where it must be kept in motion to prevent uneven action. Particularly



THE BROOK IN WINTER



THE SHADED STREAM

prints from contrasty negatives will be found inclined to become over-toned if allowed to remain in the bath too long. As my own dark-room is not equipped with running water, I proceed as follows: Water from the tank, 7 in the illustration herewith, is run into the washer, 9, until the latter overflows into the bucket, 8. Then, placing the prints in the washer, the spray pump in bucket 8 is worked and a continuous stream of water kept passing through the washer. If a fresh supply of water is deemed advisable, vessels 9 and 8 are drained by using the rubber hose as a syphon and a new supply allowed to flow into the washer from the tank, 7.

The toning bath and this wash water should be of nearly the same temperature or blisters may result, seventy degrees Fahrenheit being about right. The prints should be kept in motion in the wash water until the blue of the toner and the yellow of the ferricyanide are all removed from the high lights. If, after thirty minutes, a slight tinge of yellow remains, immerse the prints in a bath composed of three drachms of sodium bisulphite in twenty ounces of water, for five or ten minutes, the time depending upon how soon the bath attacks the toned image itself. If rocking the tray containing the toner is impractical, care should be taken to remove the sediment that collects at the bottom after a few prints have been treated. If this be allowed to remain and come in contact with the print, a blue smudge, impossible of removal, is likely to make its appearance.

The proportions of the various ingredients of this toner should not be tampered with except that the amount of ferricyanide can be reduced to one drachm if the yellow tinge persists in the high lights after a reasonable amount of washing. This will make the bath work slower, but that is not objectionable. This toner does not work with bromide papers such as are used for enlarging and it will be found that certain brands of developing paper work a little better than others, this perhaps due to the varying proportions of bromide and chloride of silver entering into their composition. In my hands, the rough-surfaced



A METHOD OF BLUE TONING

papers give the most pleasing results, probably because the toner enters into the emulsion more quickly and the softer surface permits a more rapid rejection or removal of surplus deposit, when the washing is undertaken. If a less intense blue is desired, a partially exhausted bath can be used or the fresh bath can be diluted by adding five or ten more ounces of water to that already incorporated in making up the solution as advised above.

As I had long contemplated making a photograph of my dark room, my photographic laboratory, and as such a picture would best show my arrangement for washing prints, the accompanying illustration was made. Not only did I number the several items used in washing prints, but all others were numbered as well. A brief catalogue of these various numbered articles will no doubt interest the reader. Numbers 1, 2, 3 and 4 are cabinets or cases, all fitted with ordinary table oil-cloth curtains that roll down from the top. The first is used for masks, paper and printing frames; the second for dry chemicals and scales; the third for plates and plate holders, and the fourth for trays ranging in size from 4x5 to 5x8. Number 5 is a shelf, also with a drop curtain, on which is kept fluid chemicals, prepared solutions, funnels, graduates and the like. Number 6 is a developing table, sixteen inches wide and four feet in length.

Numbers 7, 8, 9 and 10 have been described and Number 11 is a half-gallon jug for acid-hypo fixing bath for plates. Twelve is a deep metal tray, 8x9 in size, three and one-half inches deep, in which prints receive a thorough rinsing from hypo or toning bath before being placed in the print washer. This, when placed under tap in position of Number 9, is also used as a container for the plate washer shown at rear of Number 9, when plates are being freed from hypo. Having a faucet at the bottom, the water runs through into Number 8 or some larger vessel. Number 13 is a set of plate-fixing boxes of various sizes, all fitted with handles for lifting out of the solution and all coated with



THE BALL GAME

CAMERA CRAFT

enamel to prevent action of the chemicals. Number 14 is a large, shallow tray, 16x28, one and one-half inches deep, also fitted with a faucet shown near 9. With this tray the temperature of solutions being used in the smaller trays can be controlled at all times by keeping it partially filled with warm or cold water, as desired.

Number 15 is a kerosene lamp with No. 3 flat-wick burner. This is a strong printing light when gas or electricity is not available. Number 16 is a double, light-trapped box, having a slit of sufficient width to admit a 5x7 or smaller sheet of paper after removal from the printing frame. This device saves many prints that might otherwise become fogged. Number 17 is another valuable adjunct to the chemical laboratory; its absence being frequently indicated by undesirable marks on the prints being turned out.



CRAB APPLE BLOSSOMS

This equipment is easily erected against a wall, either in the home or elsewhere; is quite firm and substantial and requires but the minimum of space. The table on which the trays rest is made of two eight-inch boards hinged together so that the outer one may be turned down when not in use, making the edge of the table flush with the edges of the shelves above. The inner board is supported by two 7x9 iron brackets, while the outer one rests on two removable legs. These are made of one-inch round material and are fitted with a slightly projecting pin in each end to engage the floor and the edge of the shelf when in position. Numbers 12 and 13, with the plate-washing rack, fit into the case on which tank, 7, stands, while the remaining occupants of the shelf can be placed against the wall, either above or below. This done and the curtains drawn down over cabinets and from above shelf, the whole presents a very neat appearance, occupying, when outer edge of shelf is turned down, a space along the wall only a little over eight inches in width.



Picture Making For Publications

By the Editor



One of our correspondents who is a most successful producer of pictures for illustrations, one who asks that his name be withheld should we use his suggestion, advises that perhaps his own experience may be of assistance to those intending to compete in our farm paper cover competition. He has found that, gratifying as his success has been in making and selling pictures, he has only been able to appreciate the exact wants of those publications which appealed to him, personally, both by that elusive something that makes us prefer one magazine as against another, but by the class to which they belong. One certain boys' magazine has a strong appeal, while another has no charm whatever, despite the fact that they are much alike in general makeup and style. The result is that he finds no difficulty in selecting pictures that nearly always meet with the approval of the editor of the first, while exactly opposite is the result when he tries to fill the requirements of the latter. Much the same situation prevails in ordinary portrait photography. One photographer finds it quite easy to please theatrical people, another is very successful with children, a third with elderly people, and so on. It all resolves itself into the individual being able to do his best work where his sympathies are the most keen. As Mr. Blanchard explained in his article last month, farm life has always had an attraction for him, and this is no doubt the reason of his success in providing pictures that pleased the editors of farm papers. We would not like to say that the worker who has no sympathy with rural life could not produce pictures that would rank high in our farm paper cover competition, but we do believe that our correspondent quoted above is right to the extent that a certain amount of appreciation is required.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

THE WAY I WOULD DO: I am at present making my residence in a hospital with no prospect of getting out until three or four months have elapsed, but I would like to suggest a plan that occurs to me as a possible method of making some good pictures for this farm paper cover competition. Let the photographer pick out some farm section traversed by a fairly picturesque road, then follow down that road until he can find a position for his tripod that brings well-kept

fields and farm buildings in range of his camera to serve as a background. Then, if the road is one that is not entirely deserted, he will only have to wait a short time for some interesting figure or figures to present themselves. Here are some children going to school, here a small herd of cattle being driven to new pastures, here an ordinary farm wagon with a fine-looking team and a load of farm products of some kind being taken to market, and so on through a long list of subjects. True, everything that comes along will not be satisfactory as figures having human interest, but not a few should be capable of being so arranged as to give the proper effect. If nothing else was achieved, I should at least expect to secure a number of good suggestions for pictures to be made another day, perhaps at another place and perhaps with entirely different subjects and surroundings.—W. E. R., Illinois.

WHAT TO TRY FOR: For a long time I blundered along just as most amateurs do, wondering what really was the matter with my pictures. I thought perhaps I lacked a knowledge of composition and so tried to study up on that subject. I imagined that the subjects that I selected were not as interesting as they should be and I went about looking for the odd and unusual. One day I ran across a paragraph in an article in this magazine that set me to thinking. I forgot about composition and interesting subjects and tried to make pictures having transparent shadows and detail in the high lights. In other words, I felt quite sure that there was no pure white or coal black in any ordinary scene or subject, unless it be something painted white and in full light or something painted black well in shadow, and therefore full black or pure white in a photograph was wrong, as a rule. My work began to improve and I was better satisfied with it, and it was lucky that I awoke as early as I did, for the tendency is to cultivate a taste for these false values in our work if we do not find out the error of our ways before it is too late.—E. R. T., Oregon.

EXPOSURE FOR TELEPHOTO WORK: I have found a plan that I read in one of the magazines some years ago quite a help in estimating the exposure for telephoto work. Using the positive lens and focusing on the view, I locate and measure on the edge of a card the distance between some two definite points not too far apart. Then, focusing the telephoto combination, I measure the increased distance on the edge of another card or envelope. It is a simple matter to "step" off the first measurement and see how many times it will go into the second, and then square the figure secured. Let us say the first measurement is one inch and the second five. One inch will go into five five times; squaring five gives twenty-five, the magnification. Hence, the exposure required is twenty-five times that necessary with the positive lens, this last being easily estimated in the usual manner.—A. S. D., Ohio.

To a great extent, style consists in the manner of putting on paint (though it may also relate to drawing, coloring, or composition), and in this the connoisseur, the amateur, and the artist take a vivid interest. The "average person," however, sees little in method, and, rightly enough from his point of view, considers it lightly.—JOHN C. VAN DYKE.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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The Scientific Section of the "Royal"

As we announced last year, Doctor C. E. Kenneth Mees, head of the Experimental Laboratory of the Eastman Kodak Company, will again receive and forward pictures from this country intended for the Scientific section of the exhibition of the Royal Photographic Society this fall. The following letter, to hand just too late for our last issue, will, we trust, inspire such of our readers as are doing scientific work, to avail themselves of the opportunity afforded by the kindness of Doctor Mees.

"April 13, 1916.

*"Mr. Fayette J. Clute, Camera Craft,
San Francisco, California.*

"DEAR SIR: The sixty-first annual exhibition of the Royal Photographic Society will be held as usual in August and September of this year. In order to facilitate the collection and forwarding of scientific exhibits, I have been appointed one of the judges in the Scientific section of the forthcoming exhibition and have made arrangements to receive photographs from American workers and to forward them to London, thus relieving the photographer of all difficulty or expense.

"I should be very glad to hear from any American photographer who wishes to enter photographs in the Scientific section of the exhibition of the Royal Photographic Society and to forward him an entry form.

"For some years now the American exhibit in the Scientific section has been a comprehensive one and of great interest to European workers as showing what has been done on this side of the Atlantic, and it is earnestly desired by the Council of the Royal Photographic Society that the United States continue to be fully represented in this exhibition.

"Very truly yours,
(Signed) "C. E. K. MEES."

Our Farm Paper Cover Competition

This competition was not started to increase our subscription list, to give us a means of illustrating our pages, to secure for us pictures we could ourselves dispose of to farm paper publishers, or for any other like motive. Our only desire, in opening this competition, is to help our readers find their way along a path that offers a double reward; first, that which comes from having a definite aim that involves interesting work, and second, payment, which always awaits the tender of good examples of work such as the farm papers require for the decoration of their covers. We are ready at all times to offer our readers suggestions and advice along this line of work. We have, in former issues, given criticisms and comments, both by the managing editor of a representative farm paper and by ourselves, of pictures reproduced, and in addition, published helpful articles by Mr. Blanchard, a gentleman who is himself quite successful in this particular class of work. There are no rules covering this competition, no closing date announced, no definite prizes promised. We want to help such of our readers as may be interested and to that end solicit their co-operation. Rural

subjects are within the reach of practically every person interested in photography; but, something more is required. The object of the farm paper is to present farm life as inviting, attractive and interesting as well as to present farming as a profitable and healthful calling. The pictures they require must not present or even suggest the opposite. There must be the rural flavor, there must be human interest linked therewith, and there must be no discordant note suggesting the undesirability of farm life and farming such as sometimes results from poorly directed or insufficient effort, just as surely as it does in other walks of life. Aside from these few requirements and the necessity of securing negatives from which either contact prints or enlargements of good quality can be made, little is demanded. The field is wide, extremely so; the opportunities are all about us; the artistic requirements, while not entirely lacking, are not severe, and the work required is pleasant in the extreme, taking us, as it does, into the country and into the fresh air and sunshine. We really should have an abundance of pictures sent in to us instead of the meager supply that comes to our desk. Will our readers please make an effort in this direction? Without your interest we can do nothing, while with it we believe we can point the way to a most interesting field, one in which both profit and enjoyment will be found.

Housh Salesman Here

Don M. Harris, the hustling representative of the Housh Company, found time to pay us a visit while in this city for several weeks. His firm is putting out an excellent line of albums and a line that is being constantly improved. The latest innovation is an album with a neat pocket, harmonizing with the rest of the book, just inside the back cover, which provides a receptacle for prints belonging therein which are not as yet mounted in place. Mr. Harris reports business as excellent, a statement that seems almost obvious in view of his tactful activity in looking after it.

Hammer Representative In The City

The ever-welcome J. K. Rose is again giving the local photographers a chance to discuss the merits of Hammer plates, if they so desire, or the good qualities of any other brand, or even the weather, if they feel so disposed. Ever sympathetic and helpfully inclined, genial and good natured always, Mr. Rose finds a hearty welcome through the length and breadth of the wide territory which he covers in behalf of that excellent product, the Hammer plate.

To me, art is the expression of beauty in whatever form it may appear,—in the home, in the shop, in daily life, in thought and work. It is something infinitely deeper and broader than the form through which it manifests itself. Its measure of beauty is directly proportioned to the sincerity of purpose and the fineness of the ideals that give it form. The conscious effort to understand and appreciate a work of art strengthens our own ideals; and in striving to express our ideals, through whatever task comes to our hands, we may make our own life and the lives of others happier, more worthy, and more beautiful.—

ERNEST A. BATCHELDER.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Iodides of Mercury In Intensification

Solutions of mercury iodide are frequently used by photographers for intensification purposes, and as there are several varieties of such solutions, it is useful to understand the details of their formation. A very common type of such a solution is one of mercury iodide in potassium iodide, made by adding a sufficient quantity of potassium iodide solution to one of mercury chloride. In the making of such a solution there are three notable phases through which the materials pass. If we start by adding the iodide slowly, drop by drop, to the mercury chloride solution, shaking between each addition, then, during the early stages, the heavy red precipitate of mercuric iodide formed by each drop dissolves, leaving the solution perfectly clear. This continues until we reach a stage at which the solution assumes a faint pink tint, showing that the precipitate is no longer dissolved, and this forms the first phase for consideration. Presumably at this point we have a saturated solution of mercuric iodide in mercuric chloride, but we do not know the exact proportions which exist, or the precise degree of solubility. Rough tests suggest that about eighty molecules of the chloride will take up one of the iodide; in other words, that the weight of mercuric iodide dissolved represents about two per cent of the weight of mercury chloride. These figures are, however, only very approximate, and it may prove that water is the principal solvent.

This stage of the proceedings gives us a bleaching solution which does not produce a perfectly white image like mercury chloride, but a slightly gray one with a little extra density. If treated with hypo, we get a rather darker result than is obtained from the white bleached image, and the tone thus produced as a lantern slide is a very good one. With ammonia, again, we seem to get a rather stronger result, and slightly more intensification, though with sulphite used as

the blackening bath the difference is very small. Without more experience of this bleacher, which does not seem hitherto to have been tried, it is impossible to say more than that the first trials suggest that it is a promising formula which may prove to have advantages over the plain mercury chloride solution.

Reverting now to the preparation of the mercury iodide solution, the addition of more iodide produces more and more precipitate until the whole of the mercury is converted into the red iodide. This is the second phase in which we have the solid mercury iodide suspended or contained in a solution of the potassium chloride formed in the reaction. It is rather difficult to see when this second stage is exactly reached; and the only practical way is to calculate the quantities of potassium iodide and mercury chloride required. The exact figures, according to theory, are three hundred and thirty-two parts by weight of iodide to two hundred and seventy-one of mercury chloride, or sixty-five to fifty-three; but it is best to have the precipitant in slight excess and use the proportions five to four.

This second phase gives us a result of no use by itself, but forming the point from which we can proceed to produce solutions of mercury iodide in various solvents. It is also the best starting place for the production of such solutions, since the fresh wet red iodide is much more readily soluble than the dry compound as bought. If we continue to add potassium iodide until the red precipitate disappears, we reach the third phase, and get a solution of mercuric iodide in potassium iodide, or, more correctly, a solution of mercury-potassium-iodide. The exact proportions required are twenty-seven parts by weight of potassium iodide to eleven of mercuric chloride. As the last trace of red disappears somewhat slowly, it is as well to let the solution stand until it is quite clear. Convenient stock solutions from

which to work are four per cent mercuric chloride and ten per cent potassium iodide. We then take two hundred and seventy-five parts of the mercury solution and add to it two hundred and seventy parts of the iodide solution, or, better still, add at first nearly all the potassium iodide solution, and then the remainder, slowly in small portions, until the solution clears. In this way we can avoid using an excess of either owing to errors in the stock solutions.

This solution of mercury-potassium-iodide if applied to a negative speedily turns the image brown throughout. On thorough washing the color changes to a bright orange, and the result is an image in mercury-silver-iodide. By reason of its color and of the additional material, this image is very powerfully intensified, far too much so for most purposes. Treatment with hypo thins the image down considerably by dissolving away the silver iodide, and changes the color to brown. The intensification is now much less, though still considerable, owing to the color. Sodium sulphide changes the orange-colored image to nearly a black, and as no material is lost, the result is a very strongly intensified image. It may be noted that the orange-colored mercury-silver-iodide image is quite permanent. The more complex result produced by hypo is a little more doubtful; but the sulphide result may be expected to last well, though there is not much experience of it to go on. Instead of dissolving the mercury iodide by adding potassium iodide when the second stage is reached, we may use either sodium sulphite or hypo, adding just enough of either to clear the solution. If we use sulphite, the result is the *Lumière* intensifying solution, while if we use hypo, we have a modification of the Edwards formula. In either case the effect upon the plate is much the same, so it will be sufficient to consider more especially the effect of using hypo. The final result is a saturated solution of mercury iodide in hypo, and if applied to a negative a brown image is produced which clears up somewhat, but still remains brown (not changing to orange) upon washing. Hypo darkens the image still more, and reduces its intensity, rendering the deposit more transparent. The result has greater printing density, but sulphide will, of course, produce a still stronger effect.

The Edwards formula and most of the

formule that are in use form a sort of compromise between the solutions of mercuric iodide in potassium iodide, and in hypo, that we have described. In some cases the formule prescribe more iodide than is necessary to produce mercuric iodide, say, four to three, or three to two, instead of five to four, while in others we are told to add iodide until the precipitate is nearly all dissolved and then clear with a few drops of weak hypo solution. The last prescription gives a result that does not differ materially from that given by a plain solution of mercury iodide in potassium iodide. The washed image is not quite so bright an orange, but that is about all the difference. If we use one of the intermediate formulæ, the result is a solution of mercury iodide partly in potassium iodide and partly in hypo—or equivalent to a mixture of two such solutions. The color of the washed image is then modified, assuming some intermediate stage between orange and brown, and, generally, the browner the washed image the darker is the final image produced by the bath of hypo generally recommended.

It is inadvisable to add more than enough hypo to dissolve the mercuric iodide, because an excess converts the intensifying solution into a reducing one. Also no hypo must be added until the second phase is fully reached. If any unconverted mercury chloride remains when the hypo is added, the solution at once becomes cloudy, owing probably to the formation of some forms of thio-sulphates, which, like most metallic thio-sulphates, appear to be very unstable. The red iodide will disappear, but be replaced by white, yellow or brown precipitates of unknown composition.—*British Journal of Photography*.

Pyro For Gaslight Papers

F. C. Lambert, M.A., F.R.P.S., writing in *Amateur Photography* says:

"From time to time articles and instructions have been published recommending the use of pyro for the development of bromide paper, both for the production of black tones and tones of various degrees of warmth.

"The earliest, and I believe the most successful of these formulas was the one worked out by the editor of this paper many years ago and used regularly by him for the production of fine sepia tones on bromide paper for his exhibition prints.

A PHOTOGRAPHIC DIGEST

"The secret of success in the use of pyro for the development of bromide paper is the addition to the developer of a much larger quantity than usual of the preservative and stain-preventing constituent, such as sulphite of soda. So far, however, very little has been said of the employment of pyro in the place of the usual metol-hydroquinone developers for gaslight papers. In the following article are given the results of some work in this direction.

"First, of all, pyro is, as we all well know, apt to prove a ready finger stainer if we are not careful. Equally, if not to a greater degree even, does it stain paper; and this fact is not to be lost sight of for a moment in working paper with pyro. Observe, however, that although it will stain readily, with quite a little care and attention to certain simple precautions it need not stain either fingers or paper.

"The next point is that while it is possible to make up stock solutions of pyro which will keep and work well with plates, yet I do not recommend stock pyro solutions for paper work. If the formula is written in waterproof ink and stuck on the bottle, it is only a matter of five minutes at most to make up just as much developer as is to be used during, say, the next twenty-four hours. This may mean a little extra trouble, but it is well worth it.

"After numerous experiments I am of the (present) opinion that the following formula cannot be improved on for efficiency, simplicity, and economy. Here is a copy of the two labels on the bottles; the amounts given being for one, four and ten ounces respectively of developer, made by adding equal parts of A and B

A: Water	$\frac{1}{2}$	2	5 ounces
Soda sulphite	20	80	200 grains
Potassium metabisulphite	2	8	20 grains
Pyro	2	8	20 grains
B: Water	$\frac{1}{2}$	2	5 ounces
Soda carbonate	20	80	200 grains

"A couple of ordinary six-ounce medicine bottles, with good, sound, clean, and new corks, are recommended. By the way, it should be understood that in making up solution A the various solids should be dissolved in the order as given, the pyro not being added until all the other solids are dissolved; in fact, the later the addition of

the pyro the better. Best of all is the method of keeping one's pyro dry, and adding a two-grain spoonful just as the developer is required. One can easily cut down a penny bone mustard spoon until it has a circular end about the size of a sixpenny piece. With two or three trials, and the balance at hand, one can learn to measure with the eye the look of a two-grain spoonful quite near enough for all practical purposes.

"Although pyro is not so sensitive or responsive to variations of temperature as some of the other developing agents—and therefore in plate work we need not worry greatly about temperature if we keep anywhere within such limits as from fifty-five to seventy-five degrees Fahrenheit—yet for paper work, where we do not wish to keep the paper in the developer longer than is necessary, it is advisable to keep within the limits of sixty to seventy, and the nearer sixty-five degrees, the better. Working at a temperature between sixty and sixty-five degrees with the above formulated developer, a correctly exposed gaslight print begins to show the image in between ten and fifteen seconds after pouring on the developer. Such a print will be fully developed in something between one and two minutes, according as one wants a normal or a vigorous contrast result. These development times are given as a rough first guide to those who have not much previous experience.

"Reverting to the all-important topic of staining the paper, there is one quite simple little precaution which will be found convenient and effective, viz., the rinsing out of the graduate and the developing dish after each use. This may be done with plain water, but is better done with water in which is dissolved a little sulphite or metabisulphite. A teaspoonful or so of sulphite in a pint of water will do quite well. This may be kept on the sink in a jug or wine bottle. Let the reader put, say, a teaspoonful or so of mixed developer in the dish—i. e., a thin layer just enough to well wet the bottom of the dish—and let it stand exposed to the air for, say, five minutes. If this be looked at in daylight, the chances are it will be found considerably discolored and capable of staining any paper in contact with it. It thus becomes evident why one must be careful about getting rid of any left-over dregs of developer by rinsing out the used vessels.

"Bromide is not necessary with the above formula and any of the brands of paper which were tested with it. Furthermore, apart from the needless expense, bromide in the developer often tends to impart a greenish tinge to the image. For some sea subjects this greenish tinge may at times be acceptable. Bromide in the developer tends to retard or slow its action, which in turn means keeping the paper longer in the developer than otherwise would be necessary. At the same time it was found in the case of paper that had been kept for some time, that the addition of a little bromide kept the image clear and bright.

"What we are chiefly concerned with at the moment is obtaining a print of neutral black or of an acceptable color tinge. It obviously would serve no useful purpose in this connection to give a printers'-ink version of our experimental prints as regards their color. Therefore I submit to the editor a few examples. These range in tone from a full black to a rich chocolate brown. In each case the whites are quite clear and the paper unstained, and in comparison with a print developed with a normal M. Q. developer, there is no appreciable difference in the rendering of gradations of tone."

[The prints submitted by Mr. Lambert for our inspection are of a very pleasing warm-black and sepia color, quite unlike any tone we have hitherto seen obtained by toning bromide or gaslight prints. They approximate more the color of a sepia platinotype.—EDITOR.]

Reduction By Re-Development

In Eder's original method as described everything depends on stopping development at the right moment before it has gone too far. In the modified process we depend solely on the use of a developer that is incapable of developing the image up to its former density. Nothing is left to personal judgment save the making up of the developer, and this is made up on quite simple principles. The following is the method I first adopted: Bleach the negative in the ordinary ferricyanide and bromide bleacher used for sulphide toning. It is necessary to use a bromide bleacher, but in these days when bromide is so expensive we can economize by keeping the bromide down to one-third the amount of ferricyanide. Five grains of bromide and fifteen of ferricyanide in

each ounce of solution are quite enough, and more bromide is not only extravagant but unnecessary.

Wash the bleached plate and then re-develop with a solution containing two per cent Rodinal and one per cent potassium bromide. The formula is:

Rodinal	100 minims
Potassium bromide.....	50 grains
Water	10 ounces

With this developer working at a temperature of fifty-five degrees Fahrenheit, in half an hour the negative will be re-developed to a density equaling about sixty per cent of its original density, the change being nearly proportional throughout. A fixing bath removes the undeveloped silver salt, and a washing completes the process.

Rodinal was the re-developer first employed, but in point of fact any kind of developer can be used for the purpose. A glance at the old formula will show what kind of modification is required for our special purpose. Two per cent Rodinal is obviously a weak tank developer adapted to prolonged development, while the addition of one per cent bromide converts it into a highly restrained slow tank developer. A suitable developer for reduction purposes will therefore be any very dilute and slow-acting tank-developing formula, containing up to five grains bromide per ounce.

If the original negative is not excessively dense, we can use less bromide, and it is convenient to do so, as otherwise the time of development will be greatly prolonged. The formula given is adapted to negatives of excessive density, and as weaker ones will not require so much as forty per cent reduction, we must either reduce the bromide or prolong the time of development. A very convenient substitute for the Rodinal is Azol, which works just as well and can be used in the same strength.

The progress of development can, of course, be watched, and if the negative is examined from time to time it is easy to avoid either stopping too soon or too late. If we err in either direction, the negative is by no means spoiled. Neither detail nor gradation is lost, and the only result in the one case is a rather thin negative and in the other one that is still slightly too dense.—C. Welbourne Piper in *British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Scratched Films

An Iowa correspondent has a number of old film negatives from which he wishes to make both contact prints and enlargements. However, a number of them have scratches on the back or uncoated side, and these cause trouble. In making the contact prints, a sheet of finely ground glass or even a good quality of tissue paper over the front of the printing frame will so diffuse the light as to render such scratches harmless. In enlarging the ground glass can be interposed between the light and the negative, care being taken that in this latter case the diffusing surface is not close enough to the negative to be in focus and thus reproduce its own grain on the paper.

Softening Contrasts

One of our readers called in a week or two ago to ask how he could avoid excessive contrasts in some commercial work he had been trying to do, work photographing groups of small objects having in themselves many elements of contrast in addition to being under an unfavorable light. We advised that he might try doubling the exposure and then developing only for a portion of the required time, following by intensifying the weak negative that naturally resulted. This was tried and he has just reported that the results were very satisfactory. The suggestion may be of value to some other worker, although the method is one into which the personal equation enters so largely that different workers might meet with different degrees of success with it.

An Experiment Worth While

Pick out any ordinary landscape, or even a view, one that is quite handy and available, so situated that at some hour of the day it is lighted from directly behind the camera and at another from a point almost directly from the side, looking at it from the same position of the camera. Make a negative under both conditions and then compare the resultant

prints. Any reader who will carry out this experiment will learn more about the importance of lighting than he can from pages that I or any one else might write. Of course, the view should be such a one that shadows are cast by a number of the principal objects shown when the light falls from the side, and preferably one containing both foreground, middle distance and distance. If one wants to carry the experiment further, and this should be the case if he be at all interested in portraiture, let him try the same with a sitter posed before the lens. In this latter case it will not be necessary to make the two negatives at different hours of the day, simply turning the sitter's head answering the same purpose. Doing this, it will be well to either select such a position that the light falls from one quarter of the sky if working in the shade, or, if using sunlight, see that the sun is at such a height that its light falls at an angle of about forty-five degrees. In both these experiments the difference between direct front lighting and little or no shadows to give relief and roundness, and side lighting giving shadows that produce these desired effects, will be marked enough to impress the worker with the importance of considering the lighting in all of his work.

One Thing Lacking

Complete and efficient as are the hand cameras of the present day, there is still one thing lacking and that is a good lens shade. If you do not think so, just use your eyes when you next visit the studio of your portrait-making professional friend. True, he is not using a hand camera, but did you ever stop to think that he has less occasion to use a lens shade than does the outdoor worker, not to mention the fact that his lens is generally one provided with a much deeper lens mount in front. He does not point his lens almost directly at the sun, he does not photograph over snow, wet pavements and even water that may directly reflect strong light,

and yet he almost invariably uses a shade over his lens. Again, while your hand-camera bellows are tapered, and the perfectly dead black bellows lining has never yet been invented, his camera is fitted with a bellows of the square type and the dimensions are such that the plate is comparatively safe as against the space-economizing form of the small camera. Let the worker take some bit of stiff black paper and with some glue or paste make a funnel having its large end an oblong proportionate to the size of the film and its small end round and of such a size as to just fit and engage the front of his lens. Then let him make duplicate exposures with this in position and with the lens in its usual unprotected form. If this funnel-shaped shade flares too much, it will let in some undesirable light, and if it be too narrow, a part of the image will be cut off. If it is to extend two inches in front of the lens, the inside diameter of the bellows at that distance behind the lens will be about the right size for the front of the shade. This shade is simply for experimental purposes and, once the user satisfies himself as to its value, a little ingenuity will evolve a folding one, perhaps bellows form, that can be carried about easily.

Long Portrait Exposures

A recent visitor, an out-of-town subscriber, brought in a bunch of quite interesting portraits, all of them the result of exposures ranging from thirty seconds to several minutes. If any of my readers want to try something interesting in the way of experiments, let them try making portraits under conditions that necessitate exposures of this kind. A good, strong candle will afford light enough for a portrait if the exposure be long enough. This means that the pose selected be an easy one, but what more natural than this same easy pose, perhaps with the head resting on the hand as in reading, for this kind of a picture. And such a pose does not mean that the eyes be directed downward. The position of the head may be one of downward inclination, but the eyes can be directed at the lens as if the subject had just glanced up from the pages found so interesting. A large kerosene lamp does not necessitate so long an exposure as one would suppose, and gas and electric lights will afford illumination sufficient to produce a good negative in much less time than the person

unacquainted with such exposures would believe. In addition, there is an indescribable effect of naturalness and poise secured with these long exposures that is generally lacking in the frozen results secured by those of very short duration. One trying this line of work will be pleased with the results; and, if a little judgment be used in timing so that not too many negatives are lost through under-exposure, he will be surprised at the small number of failures through movement of the subject. In one of the pictures our friend showed us he explained that the subject had forgotten his work and turned his head aside for a moment, luckily returning to exactly the original position when told to do so. With these long exposures the effect of movement of this kind goes unrecorded just as does the movement of figures passing a building being photographed with a small stop in order to prolong the exposure.

The New Bromide Fabric

The Eastman Company announce that they have found a fabric perfect enough to permit of its being coated with a photographic emulsion; one making an ideal medium for certain kinds of photographic work, particularly because it will last almost indefinitely. This is being placed on the market under the name of Eastman Bromide Fabric No. 1. It is of fine texture, practically free from imperfections in weaving, with a beautiful surface and texture that are especially suited for portraits and other prints that are to be colored.

The canvas effect of an oil-colored portrait is very desirable; and, when it is not necessary to work for effect alone, that is, when the print is actually made on a fine grade of fabric, the textural effect of the fabric is convincing proof of its quality and worth. The fabric will be found excellent for many kinds of commercial prints that heretofore have been mounted on cloth for binding; in fact, it can be used for practically any work except where a glossy surface is required.

Eastman Bromide Fabric has approximately the same body and weight as a paper, is coated with a bromide emulsion and works in every way like a bromide paper. The price is extremely reasonable, being, we believe, only a trifle higher than Velox paper, and it is furnished in one dozen, one-half gross, and one-gross packages, as well as in ten-foot and ten-yard rolls.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

A Worthy Memorial

The council of the Royal Photographic Society of Great Britain have appointed the following committee to consider the question of a memorial fund to be established to the memory of Doctor Ferdinand Hurter and Mr. Vero C. Driffield: Sir W. de W. Abney, Major General Waterhouse, George E. Brown, editor of the *British Journal of Photography*, F. F. Renwick and W. B. Ferguson; the two latter acting as secretary and treasurer, respectively. Professor E. J. Wall, of the Syracuse University, has been asked to act as an auxiliary treasurer for this country so that Americans, who wish to subscribe to this memorial fund, might have the opportunity of doing so.

Messrs. Hurter and Driffield laid the foundation of all modern scientific photography. To them is actually due the production of the rapid dry plate of the present day and to them photographers owe a great debt of gratitude for the work done, a debt which it is now desired to recognize in a permanent memorial. It is hoped that this memorial will take the form of a reprint of all the articles published by Messrs. Hurter and Driffield, together with explanatory notes and comments by other workers, as well as an annual lecture to be delivered in their honor and published in the photographic press.

Subscriptions to any extent, no matter how small, will be gladly received and should be sent to E. J. Wall, Syracuse University, Syracuse, New York. We are glad to be able to announce that the Eastman Kodak Company has promised one thousand dollars as its subscription to the fund.

M. A. A. Camera Club

The Tenth Annual Exhibition, April tenth to fifteenth, inclusive, in the club rooms, 250 Peel Street, Montreal, attracted exhibits from many parts of Canada, the United States, and also from Great Britain.

Sir William Brymner, President of the Royal Canadian Academy, Sidney Carter and

T. H. Dupras acted as judges, awarding the prizes, silver and bronze medals and honorable mention in each of the four classes, Figure Studies, Landscapes, Waterscapes and Genre, as follows, in order given:

Figure Studies; first prize and honorable mention to O. L. Griffith for his "Position from Dance" and "Figure from a Frieze." Second prize to W. G. Shields for his "The Orange Girl." Landscapes; first prize and two honor mentions to B. J. Morris for his "Quiescence," "The Temple" and "A Hoosier Moon." Second prize to C. W. Christiansen for his "Prairie Giants," and honorable mention to H. H. Hyde for his "Burgundian Landscape." Waterscapes; first prize to H. H. Hyde for his "Chateau de Chillon" and second prize to Wm. H. Rabe for his "The Messenger." Genre; first prize and honorable mention to Wm. H. Rabe for his "The Scribe" and "Interested," and second prize to John P. Edwards for his "The Court Verocchio."

Notwithstanding the unsettled conditions incident to the war, the artistic quality of the work submitted was very gratifying and made possible a very presentable exhibition of amateur photography.

St. Louis Camera Club

The St. Louis Camera Club will hold its Second Annual Exhibition of the work of its members at the art rooms of the Central Public Library in that city from June fifth to twenty-fourth. In connection therewith will be given lantern slide lectures based on slides made by members only. These two lectures will be held in the assembly room of the library at eight p. m. on June eighth and twenty-second, a different set of slides being shown each evening. Admission to both the exhibition and these lectures is free, and amateurs in St. Louis are not only invited to attend, but to become members, the dues being only two dollars per year. Those interested should correspond with S. F. Duckworth, Secretary, 2156 Allen Avenue, St. Louis.

OUR BOOK SHELVES

"The Balance of Light and Shade in Portraiture"

This is the title of a book based on the lecture given by William H. Towles, the well-known portrait photographer of Washington, D. C., with such success at numerous conventions during the past two years. The book is a handsome buckram bound one, of about fifty pages, thoroughly illustrated with over forty specimens of Mr. Towles' own work, and the text is written in a most charming non-technical style that will appeal to every reader. Even the most superficial perusal of this book will be beneficial to any portrait worker, while a careful study cannot but result in an improvement of one's work in the portrait line. It is published by Abel's Photographic Weekly, 917 Schofield Building, Cleveland, Ohio, and will be sent

postpaid upon receipt of one dollar and fifty cents.

"A Camera and a Competence"

We have just received from the publisher a copy of a neat little booklet bearing the above title, one that should give many valuable hints to the one desirous of finding a market for his photographs. Its thirty-two pages are crowded with practical advice and lists of publications that use and buy photographs such as are suggested in the book. The reader is told how to advertise and build a photographic business, how to make and use photographs in serial form, the advantage of a specialty, how to arrange a filing and selling plan, and concerning the class of photographs required by publications. Copies of the book may be obtained by sending fifty cents to the publisher, W. Clement Moore, New Egypt, New Jersey.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Room 237, Union Depot, Denver, Colo.

J. H. Winchell, Chief Album Director, R. F. D. No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Call Building, San Francisco.

Charles M. Smythe, Director Post Card Division, 1160 Detroit St., Denver, Colo.

NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

James B. Warner, Director Stereoscopic Division, 413-415 Call Building, San Francisco. 250

NOTE.—All stereoscopic slides sent to Director for the circulating sets must be mounted, titled, and show the maker's name and I. P. A. number on the back of mount. Notify the Director how many mounts can be used, and a supply will be sent you by return mail.

George E. Moulthrop, Director Lantern Slide Division, Bristol, Conn.

Edward B. Cowles, Secretary Lantern Slide Division, 11 Oak St., Bristol, Conn.

STATE SECRETARIES.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

California—A. E. Davies, 894 55th St., Oakland.

Idaho—Eugene Clifford, Weippe.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Missouri—J. F. Peters, Room 210, Union Station, St. Louis.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New York—Louis R. Murray, 21 Clark St., Ogdensburg.
 Oregon—F. L. Derby, La Fayette.
 Texas—Emmett L. Lovett, Roby.
 Wisconsin—F. W. Freitag, 500 Monument Square, Racine.
 Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

ALBUM DIRECTOR.

Alabama—Richard Hines, Jr., Barton Academy Bldg., Mobile.
 Alaska—P. S. Hunt, Valdez.
 California—W. E. Thomson, 3211 School St., Fruitvale.
 Colorado—O. E. Aultman, 106 E. Main St., Trinidad.
 Connecticut—George E. Moulthrop, Bristol.
 Florida—Capt. E. S. Coutant, Lock Box 73, Stuart.
 Georgia—L. O. Surles, P. O. Box 434, Cuthbert.
 Idaho—Eugene Clifford, Weippe.
 Illinois—George A. Price, 802 West Park St., Urbana.
 Indiana—H. E. Bishop, 1706 College Ave., Indianapolis.
 Iowa—C. W. Parker, Mapleton.
 Kansas—H. E. High, Box 72, Ellsworth.
 Maryland—E. G. Hooper, 218 East 20th St., Baltimore.
 Massachusetts—John Mardon, 161 Summer St., Boston.
 Michigan—W. E. Ziegenfuss, M. D., 327 West Hancock Ave., Detroit.
 Minnesota—Leonard A. Williams, St. Cloud.
 Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.
 Missouri—Wharton Schooler, R. F. D. No. 2, Eolia.
 Nebraska—Miss Lou P. Tillotson, 822 South 38th St., Omaha.
 New Hampshire—Mrs. A. Leonora Kellogg, Box 224, Londonderry.
 New York—Charles F. Rice, P. O. Box 517, Manaroneck.
 New Jersey—Burton H. Allbee, 103 Union St., Hackensack.
 North Dakota—Jas. A. Van Kleeck, 619 Second Ave., North Fargo.
 Ohio—J. H. Winchell, R. F. D. No. 2, Painesville.
 Pennsylvania—L. A. Sneary, 2822 Espy Ave., Pittsburg, Pa.
 South Dakota—C. B. Bolles, L. B. 351, Aberdeen.
 Texas—J. B. Oheim, P. O. Drawer M, Henrietta.
 Utah—John C. Swenson, A. B., Provo.
 West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS

4205—F. C. Greene, Box 75, Columbia Falls, Mont.
 Class 2.
 4206—J. T. Karlin, 128 Inca, Denver, Colo.
 Class 3.
 4207—Dr. F. D. Snyder, F. R. G. S., Box 371, Ashtabula, Ohio.
 Class 2.
 4208—J. Montague Bate, 442 Wilbrod St., Ottawa, Ont., Canada.
 5x7, developing papers, of landscapes, snow, buildings, etc.; for any subject of interest.
 Class 1.
 4209—George Gibson, P. O. Box 474, Concord, Cal.
 Class 2.
 4210—E. D. Ayres, care First National Bank, Hilo, Hawaii, T. H.
 Class 3.
 4211—H. H. Boarts, Westmoreland National Bank Bldg., Greensburg, Pa.
 Class 2.
 4212—F. C. Jackson, Siletz, Ore.
 Class 2.
 4213—H. C. Chaffee, Ipswich, S. D.
 5x7, developing papers, of residences and farm views; for anything of interest. Class 1.

4214—Mrs. Mark H. Waterbury, Oriskany, N. Y.
 Class 3.
 4215—Roy H. Wagner, P. O. Box R, care Allbery, Chadron, Neb.
 3¼x5½, 3x5¼ and 3¼x2¼, various papers, of landscapes, trick photos and good Indian pictures; for landscapes, views, trick pictures, historical or any subject of general interest. Class 1.
 4216—Celia Lancaster, R. F. D. No. 10, Hill-yard, Wash.
 Class 2.

RENEWALS

1734—W. D. O'Neil, 116 South 4th St., Minneapolis, Minn.
 Any size, various papers, of general views; for the same. Class 1.
 1865X—Chas. W. Davies, Box 528, Lake Charles, La.
 Any subject or size desired for post cards of pictorial interest, also portraits of girls or children. Class 1.
 1980—Ansel Kisser, Catawba, W. Va.
 Class 2.
 2498—Dr. B. B. Sprout, 516 W. 4th St., Williamsport, Pa.
 3¼x4¼, 4¼x6½ and 5x7, of miscellaneous subjects, some speed work; for the same. Class 1.
 3531—Geo. C. Allen, 47 Morris St., Hartford, Conn.
 All sizes up to 5x7, developing papers, of historical, marines, landscapes, general views of city buildings, etc.; for views of all kinds, especially desire old missions and pictures of Totem poles. Class 1.
 4071—Arthur J. Thompson, 747 S. Los Robles Ave., Pasadena, Cal.
 Class 2.
 4090—John W. Cook, 1117 W. Avenue 54, Los Angeles, Cal.
 Stereo, 5x7 and smaller, also lantern slides, various papers, of pictorial, historical and general views; for the same. Stereoscopic views, principally. Class 1.
 4300—W. E. Owen, 305 Thompson St., Pendleton, Ore.
 3¼x5½, developing papers, of local scenery and amateur portraits; for the same. Class 1.
 CHANGES OF ADDRESS
 3358—Asa L. Brower, Kamas, Utah.
 (Was Ogden, Utah.)
 4152—Thos. J. Bones, 550 Flower St., Los Angeles, Cal.
 (Was 127 27th St.)

Illinois College of Photography

In the program for the National Photographers' Convention, Cleveland, July twenty-fourth to twenty-ninth, we notice that Edward Weston, of Tropico, California, is to give a demonstration on pictorial photography. Mr. Weston, who is a former Illinois College student, is a high-class workman, who has recently won a large number of prizes.

The snipe hunting season opened a short time ago and a number of students interested in the sport made several expeditions southeast of the city. The enthusiastic ones were given the privilege of holding the bag, while others drove the snipe into it. The former were not successful in "landing" a single snipe. However, they did their task well, one of them not reaching home until about three o'clock in the morning.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

Mrs. M. L. B. Winslow is now at Willits in charge of the Wonacott Studio. She is a graduate of Daddy Lively's School; does some excellent work.

H. A. Bliler, of Fortuna, now has a very fine studio with everything on the ground floor and on the main street.

J. E. Cook, of Woodland, is very busy with school work just at the present.

Jos. Thompson, of Gatliff & Thompson, Eureka, as usual, got out his fishing rod on May first, but failed to deliver any fish to the writer as promised.

H. H. Wonacott now spends most of his time on his ranch between Willits and Ukiah. His studio is in charge of Mrs. Winslow.

Alexander Holmes, of Eureka and Ferndale, is dodging around Humboldt County in a Dodge.

The New Ansco Catalogue

The new 1916 Amateur catalogue just issued by the Ansco Company is a beauty in addition to being most interesting, covering as it does some fifty-eight different styles and models, Speedex film and film packs, Cyko paper, and Ansco chemicals. Some new camera models have been added to the line; namely, the Ansco V-P No. 0 in two styles. The former, possessing many novelties of structure, fall in line between the Folding Buster Brown and the Folding Ansco series. The Junior cameras are all equipped with the new Ansco self-leveling viewfinder. The Ansco V-P No. 0, with focusing jacket, has the distinction of being the only camera of its size in the world which has a device for focusing, thus enabling the user to take full advantage of its high-grade anastigmat lens. Other new Ansco products described in this new catalogue are the Ansco Film Pack Adapter and Enlarging Cyko Contrast Paper, supplementing the already popular regular Enlarging Cyko. Full description and price information are given,

chapters are devoted to Ansco lenses, shutter equipment, and the exclusive structural features of the Ansco cameras. The firm will be pleased to furnish a copy to any one interested and will also send a specimen picture taken by any model of camera the inquirer may select. Address, Ansco Company, Binghamton, New York.

Some Misplaced Figures

In the advertisement, a very interesting and instructive one, entitled "A Cooper Hewitt Negative and How It Was Made," in our last issue, there were a few mistakes that, while not such as to confuse, we regret. The speed of the lens should have been f-5.6 instead of as printed, "in front" should have read "at forty-five degrees," and the number of the bulletin should have been given as No. 2258A. Also, the initials, N. Y., should have appeared after Mr. Schwarz's name under the portrait at the right. We are reprinting the advertisement, fully corrected, in this issue and would urge all our readers to send for a copy of this special free booklet, one that we have taken the opportunity of recommending to their attention just a short time ago. Address inquiries to the Cooper Hewitt Electric Company, Eighth and Grand Street, Hoboken, New Jersey. It will be found particularly well illustrated and instructive.

Advertising Card Sells Pencils

In these columns we have never spoken about the very effective black and white sign gotten out by the Joseph Dixon Crucible Company to advertise Dixon's Best white No. 352 pencils, which are recommended for use on photo albums and photo mounts, as well as for marking and securing high lights on dull-finished photographs and negatives. One of the leading photographic and drawing supply houses in Boston advises that since they put this sign up in their store, they have sold a lot of the pencils to customers who, observing the card, asked to see the pencils. The photographic trade generally will no

NOTES AND COMMENT

doubt be glad to have this suggestion. By writing the Joseph Dixon Crucible Company, Jersey City, New Jersey, any reliable merchant can obtain a supply of these pencils and also the show cards.

An Enterprising Firm

The illustration herewith is a reproduction of a full-page advertisement that recently appeared in the *Chicago Daily Journal*, setting forth the announcement of the David Stern Company of that city. As this advertisement appeared in an issue covering the opening of the baseball season there in Chicago, the pictures and club schedule bordering the page, as well as the baseball flavor



of the advertisement itself, made the announcement particularly timely and appropriate. The advertisement is one that could not fail but attract the attention of the baseball fan with which Chicago is certainly well supplied. The David Stern Company, one of the largest camera exchanges in the country, has been in business for over thirty-one years. Their advertisement has appeared in our pages for a number of years, and during that time we have never received other than praise of their fair dealing from the many pleased customers whom they have among our readers. They have just issued a comprehensive catalogue of new and used cameras,

and every photographer of an economical turn of mind, be he amateur or professional, should send for a copy and investigate the many money-saving opportunities that it affords in the line of cameras and supplies. This catalogue will be gladly sent free upon request addressed to David Stern Company, 1047C West Madison Street, Chicago, Illinois.

Motion Picture Equipment

A neat descriptive booklet of the Goerz Kino Hypar lens working at f-3.5 has come to hand, and proves most interesting. The same booklet describes the Ango Focusing Mount, the Micrometer Mount, the Dissolving and Vignetting Shutter, the Double-Exposure Box and other utilities manufactured by the same firm for use on motion picture cameras. All these goods are of the high order and excellent characteristics of the Goerz line, and such of our readers as are interested therein should send for a copy of this booklet, addressing the C. P. Goerz American Optical Company, 321½ East Thirty-fourth Street, New York City.

"Wait-A-Minute"

On another page will be found the advertisement of an ingenious little device about the size of a penknife that engages the cable release of one's shutter, which last is automatically operated so as to permit the photographer to include himself in any group or landscape picture he may be taking. While it is applicable only to the cable form of shutter release and not to a bulb and tube, the cost of replacing the unsatisfactory bulb and tube with the more satisfactory cable release is but slight. This handy little attachment is meeting with good success, showing that the average camera user appreciates a means of securing photographic records of himself with friends while on trips or vacations, where the average kodak user does a great part of his plate or film exposing. If your dealer has not yet secured a supply, orders enclosing the price, one dollar, will be given prompt attention by the manufacturer, E. E. Webster, 219 South Dearborn Street, Chicago. The local firms of Hirsch & Kaiser and Marsh & Company have orders placed and no doubt will have them on sale by the time this reaches the reader's eye.

Two Enterprising Dealers

Charles G. Willoughby, of "Willoughby and a Square Deal" fame, announces that his

CAMERA CRAFT

is the first photographic stock house in New York City to inaugurate an automobile delivery service. The idea is a good one and it is suggested as worthy of the serious consideration of progressive dealers in other cities where the prompt service made possible would have the hearty appreciation of studio and commercial photographers. However, despite the progressive spirit which this announcement seems to indicate as quite enterprising in New York City, the automobile delivery of the well-known firm of Hirsch & Kaiser, of this city, has long ago ceased to be other than the regular thing in delivering photographic supplies ordered of them.

A Fine Enlarging Camera

The new Ansco Enlarging Outfit is the result of the interest shown in the outfit installed at the last National Convention for the purpose of demonstrating Enlarging Cyko. The interest shown was conclusive that an equipment along the same lines would meet with approval, and we are glad to announce that this equipment is now available through regular trade channels.

Briefly, it consists of an 8x10 enlarging camera having an extension base equipped with an easel or copying board, the whole resting on a supporting table occupying a floor space of thirty-one by fifty-seven inches. The adjustment of negative, lens and easel is achieved by a most simple and efficient cable control that enables the worker to make adjustment easily and quickly without shifting his position from the side of the outfit. The new and efficient M-shaped Cooper Hewitt tube is employed with this outfit, the quality of the light being such that roundness and atmosphere are brought out, while any coarseness or retouching is not accentuated. Space does not permit of a full cataloguing of the many advantages of this enlarging outfit, but a circular giving particulars can be obtained from the Ansco Company, its various branches, or dealers carrying its line.

New Ilex Catalogue

All our readers know of the strong claims made for the Ilex shutters and therefore should send for a copy of the new catalogue just gotten out by the manufacturers, one showing the escapement on the set of gears controlling the lower speeds and also the auxiliary speed adjuster, which gives the exact variations for the higher ones. These

are exclusive features, the Ilex shutters being neither operated nor controlled by air cylinders. Just as the simplicity and efficiency of this escapement-controlled set of gears are interesting, the new catalogue will be found even more so, as it lists and describes the various styles, does the same for the Ilex series of lenses, and shows a number of fine reproductions of photographs made with them. Copies of this new catalogue will be gladly sent upon request. Address Ilex Optical Company, 627 Ilex Circle, Rochester, New York.

Mission Photo In New Location

Rapid growth is being made by the Mission Photo Supply Company. This concern is now established in its large new store at 88 Third Street, near Mission, where it has every facility for properly handling its steadily increasing business. The new quarters, besides being more centrally located, afford more room than the old one, and are equipped throughout in the most modern manner for effectively displaying photographic material. Practically all lines are now being handled in the new store. A large assortment of Defender and Ansco products are carried, as well as Eastman goods; while an up-to-date exchange department is now a feature of the store. Increased efficiency in the shipping department will give customers every possible advantage due to the prompt filling of mail orders. Local photographers are cordially invited to visit and inspect the new store and the new premises, and those out of town are urged to make the store their headquarters when visiting San Francisco.

The New Goerz Lines

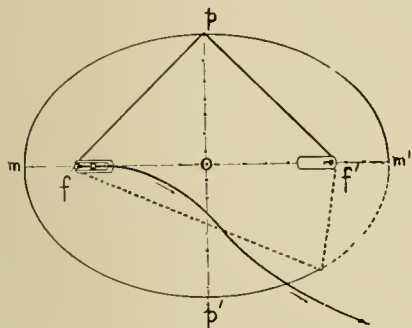
An addition to the well-known Goerz series is the new Rotar Lens working at f-8, designed for general purpose work. It is designed to meet the demand for crisp definition over the entire plate when high speed is of secondary importance. This would seem to make it particularly adapted to the requirements of photoengravers and also to the commercial photographer who requires an efficient lens for copying, enlarging and such work where snap and brilliancy are essential. One should not overlook the fact that the formerly popular rapid rectilinear rarely worked at a larger aperture than this same f-8, and answered practically all the requirements of the photographer for other than

NOTES AND COMMENT

portrait and very high speed work; and therefore this new anastigmat with its flat field and crisp definition should fill the same requirements to even a much higher degree. Particulars of course can be secured from practically all dealers, or directly from the C. P. Goerz American Optical Company, 321½ East Thirty-fourth Street, New York City.

Perfect Ovals With Ease

To make an ellipse, oval, or elliptical arch of any given shape or size has always been a problem and one grasped only by those schooled in the higher mathematics. The Universal Ellipsograph represented in the accompanying illustration is an invention



which has but recently been put upon the market and which makes the problem so simple as to require no technical knowledge whatever. The length and width of the desired oval being known, one has but to locate the two pin anchors at points easily determined thereby, draw the cord taut against a pencil held at an end or side, and then draw the oval within the confines of the loop thus created. While its primary purpose was for the use of architects, engineers and builders, in laying off their arches, ovals, etc., the other uses to which it can be applied by the photographer, be he professional or amateur, are obvious, as it supplies him with the means of making oval mats and cut-outs of any size or shape, from the smallest up to two feet, or even more, on its greater axes. It is so compact that it can be carried in the vest pocket. S. Ernest Smith, 331 Madison Avenue, New York, will gladly mail one, together with full instructions, to any address upon receipt of seventy-five cents.

A New Pocket Camera

The new Auto-Fixt-Focus camera, 2¼x3¼ pocket size, American made throughout, is

announced. It is equipped with two focusing scales, the one on the outside permitting of setting the focus before the camera is opened, instantly and automatically. The back is permanently hinged to the case, preventing "wrong-end-to" and other troubles. The spool centers work automatically and require no manipulation further than that afforded by the thumb-roll adjustment. The case is all metal, covered with the best quality grain leather, all exposed metal parts being finely nicked. Equipped with a four-inch f-4.8 Celor or f-6.8 Dagor in Acme shutter working to one three-hundredth of a second. A Windsor grain leather carrying case completes the handsome outfit. This camera is being placed on the market by Herbert & Huesgen Company, 18 East Forty-second Street, New York. Descriptive matter will be gladly sent our readers upon request made to the firm.

The Simplex Line

We have just received from the local agent, Enno Lion, 250 Twelfth Avenue, this city, advanced sheets of the Simplex catalogue No. 21. This lists and describes the handsome little Alamo Motion Picture Camera, the Baby. Projector, Multiflex Enlarging Lamp, Precision Camera, the well-known Multi-Exposure Camera and other goods manufactured by the Simplex Photo Products Company of Morris Park, Long Island, New York. The firm we understand is developing and making additions to its lines and therefore is unable to close the forms for its complete catalogue at the present time, but these advanced sheets can be secured of Mr. Lion or direct from the company, and we would advise our readers to avail themselves of the opportunity of investigating the merits of these goods, should they be interested.

A Book of Pictures

Last fall, C. L. Seagraves, of the Santa Fe Railroad, took two trainloads of Eastern farmers on a special trip to see California. These parties were made up of real farmers, who were shown the country not only by rail, but by automobiles, covering more than six hundred miles. They were made the guests of the local communities, the chambers of commerce and boards of trade providing the automobiles and giving the parties a thorough opportunity of studying the farm

conditions surrounding these various local communities. While the trip was not a land-selling one, these farmers saw fruit orchards, dairy farms, poultry yards, cattle ranches, farms devoted to hay and grain and diversified farming with its sure returns under California conditions. A photographer accompanied both parties and a fine collection of pictures was taken on the trip. Those making up the two parties were asked to write Mr. Seagraves upon their reaching home, and their letters, together with reproductions of an endless number of the excellent photographs taken, have been published in a book as a souvenir for the members of the two parties as well as to be helpful to others who would like to know more about California. This book with its beautiful collection of pictures will be sent free upon request to our readers who will write asking for a copy of the "Farmers' Special Book," addressing

C. L. Seagraves, General Colonization Agent, Atchison, Topeka & Santa Fe Railway, 1715 Railway Exchange, Chicago.

Some Fine Albums

For a year or more the firm of Farron S. Betts has done a valuable work in persuading amateur and professional photographers to "Get the Album Habit." The line of photographic albums manufactured by this well-known house covers every requirement of the amateur, professional and commercial photographer. It is carried by most photographic dealers and is worth looking into, now that the winter months and long evenings are ahead. Meanwhile, I am asked to advise my readers that the New York office and salesrooms of the firm have been closed and are now consolidated with the factory at 220 Thirty-sixth Street, Brooklyn, New York, to which address all communications should hereafter be addressed.

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24th, 1912, for April 1st, 1916, of CAMERA CRAFT, published monthly at San Francisco, State of California, County of San Francisco.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fayette J. Clute, who, having been duly sworn according to law, deposes and says that he is the Editor of the CAMERA CRAFT and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

Publisher, Camera Craft Publishing Company, San Francisco, California; Editor, Fayette J. Clute, San Francisco, California; Managing Editor, Fayette J. Clute, San Francisco, California; Business Manager, Fayette J. Clute, San Francisco, California. That the owners are Camera Craft Publishing Company, San Francisco, California; Harriette E. Clute, Trustee, Hanford, California; Romaine F. Clute and Clifford H. Clute, Beneficiaries, Mountain View, California.

That the known bondholders, mortgagees,

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That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

(Signed) FAYETTE J. CLUTE, Editor.

Sworn to and subscribed before me this fourth day of April, 1916.

SID J. PALMER, Notary Public, in and for the City and County of San Francisco, State of California. My commission expires December thirty-first, 1918.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA

Performance, service—
not claims, have made

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the standard photographic printing medium all over the world. The European war has very forcibly demonstrated this fact. Since the shortage of raw materials compelled us to reserve all CYKO paper for the American market, buyers all over the world have begged for CYKO paper at any price.

Ansco Company

Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. ¶**Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. ¶**New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. ¶**Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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Canada	Kodak Australasia, Ltd., Sydney
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Mexico	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
New Zealand	Caipini y Cia., Mexico City
Philippine Islands	H. J. Jones & Co., Ltd., Wanganui
Japan	Squires, Bingham & Co., Manila
	K. Kimbel, Yokohama



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WE have a complete, modern and thoroughly equipped department for developing, printing and enlarging. No expense has been spared to make the equipment so good that, with the skilled workmen in our employ, we are able to guarantee the best results that can be obtained.

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SAN FRANCISCO



"BY PALE MOONLIGHT"
A. M. CLAY



CAMERA



CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

JULY, 1916

No. 7

With Scissors and Ruler

By Allen M. Clay



With Illustrations by the Author

The old aphorism, "The camera never lies," has been so often and so amply contradicted by facts that there seems to be little excuse for again bringing it to notice. However, all but the veriest tyro amongst us is familiar with the unpardonable lies the camera is guilty of in distorting perspective, producing horses with Brobdingnagian heads and Lilliputian tails, even going so far in its reckless mendacity as to actually reverse the image of the sun itself. With all these and many more crimes charged and proven, it becomes quite easy after all to say, "The camera does not tell the truth." But there are two sides to this question, as to all others, and the camera, with proper encouragement and reasonably intelligent handling, can be made to record its impressions truthfully; on the other hand, if carelessly used, with ignorance of its many possibilities and—we may charitably say—its limitations, it is indeed often an unreliable and faithless record of the beauties of life amid which we live.

This is not meant to be a discourse upon the use of lens, stops or shutters, but is merely intended to offer, from an amateur's experience, a few helpful suggestions and to endeavor to point out, by some examples, what may be accomplished by a wise utilization of the negative our camera has been good enough to produce for us, and to indicate how we may often, by proper trimming and judicious selection of the printing medium, evolve a picture that will be attractive and more or less faithfully reproductive of the scene, instead of a mere print from the negative—a photograph.

It may be accepted as an axiom that a picture can be found in any negative that is not actually worthless from over or under exposure, and while this might



AFTERNOON HAZE—Untrimmed

hastily consign it to the scrap heap because it does not give you at once a satisfactory picture; let it have a chance to prove its worth, remembering always that the diamond in the rough is not a bit attractive until by subdividing, cutting and polishing its hidden charms are brought forth, and what seemed at first to be only a worthless crystal has become a beauty and a joy forever. Before condemning your negative as worthless, make a print from it and with four strips of cards, or better still, two L-shaped forms, proceed to block off or eliminate what appear to be undesirable portions. It may be a tree near one side of the plate is so much in evidence as to rob another and more desired object of its dominance. This may be corrected by cutting off the tree entirely or by bringing it close to the side of the picture space where it loses its importance, thereby serving to balance instead of predominating over that part that should be the real point of interest of the picture.

not have been absolutely true in the days of the large glass negatives from which mainly contact prints were made, it is especially true of the present, when the smallest of cameras, often of an inexpensive type, produce negatives from which portions may be selected and enlarged, when the negative as a whole would scarcely be worth saving. Assuming, then, your negative to have been correctly exposed and found capable of yielding a print of fair quality, do not



AT WINTER'S MOORINGS

WITH SCISSORS AND RULER



AFTERNOON HAZE

Again, your point of chief interest may be too near the center—always the weakest place—and this may be modified in the same way. Perhaps, and it is often so, there is too much foreground or it contains some distracting objects probably out of focus. Eliminating some of this and a generous portion of the weaker end of the print will give your principal object its proper place, increase its importance and permit it to seize and retain the chief attention.

For example, the small picture called "Afternoon Haze" is reproduced from an untrimmed contact print on hard or contrast paper. The exposure was made late in the afternoon of a warm day in early spring with the low-lying sun, veiled in a soft haze, just out of the picture at the left. The print reveals two very obvious defects; the eye is attracted from the large eucalyptus tree that forms the striking note in the picture, first to a considerable area of bright light in the corner nearest the sun, and second to several smaller trees on the other side of the print, that seem in their lack of detail like telegraph poles against the middle distance. By covering the two objectionable ends and trimming half an inch from the foreground, the result was a well-balanced picture. The negative was then matted in accordance with this trimming and an enlargement made to the size of the original negative, producing the print from which the second and larger reproduction was made. An additional point of interest was the choice of the printing medium. The first was printed on contrasty

paper, the result being an almost total loss of the atmospheric effect of the hazy middle distance. By making the enlargement on a soft paper, the haze was apparent and the title of the picture justified. [It is to be regretted that the halftone cannot reproduce the colors of the eucalyptus foliage or the atmospheric effect that appeared in the enlargement submitted by the author and which had been stained a soft olive green.—EDITOR.]

As a fairly typical example of the possibility of securing a worthy picture from a generally uninteresting negative, attention may be directed to the reproduction, on a preceding page, of "At Winter Moorings," the halftone of which is reduced from a 5x7 print. The original 4x5 negative was made many years ago by the writer, but cannot be reproduced, as it is unfortunately not in existence. When looking over a lot of old negatives, this one was about to be scrapped, when, in one corner, in a space the size of a postage stamp, what seemed to be a picture was observed and, as the negative was sharp, that portion was enlarged to about 11x14 inches. A few pinholes were filled up, an ugly scratch corrected and a new 5x7 negative made. From this print, on a soft paper, the halftone was produced. This picture, much resembling a wash drawing in its broad reflections, has been in no way improved or "doctored," except as noted, and was literally a brand from the burning, an artistic bit saved from an otherwise worthless record photograph. A bromoil enlargement of it, 11x16 inches, in dull sea-green color, by Kunz, hangs in the writer's home, one of his most valued treasures.

A few words more, to illustrate the advantage of a proper choice of printing medium in producing a desired effect in the picture. The one reproduced as

the frontispiece is in reality a daylight exposure, as the small replica of it on this page clearly shows. The picture was made late in the afternoon of a February day against brilliant sunlight, with an exposure of three seconds at f-16, using a five times color screen. The small print was made on contrasty paper, which resulted in hard lighting with transparent shadows, clearly a daylight picture. By enlarging on soft paper and staining the print a pale blue, the weird charm of cold moonlight was produced. So much for the correct paper and the kindness of an indulgent Editor in thus permitting daylight to masquerade as moonlight in the pages of CAMERA CRAFT.



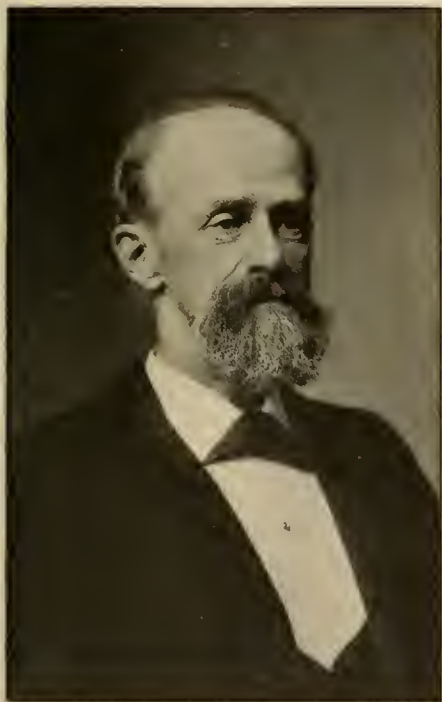
BY PALE MOONLIGHT

A Patriarch In Kallitype

By Sigismund Blumann



Illustrated with Reproductions of "Polychrome" Prints



N. C. HAWKS, MAKER OF POLYCHROME

Kallitype, one of the least practiced of the printing processes, seems paradoxically to be an ever-interesting subject for photographic readers. My own modest articles thereon have brought me a mass of correspondence both encouraging and cheering. It seemed as if I had hit on the open sesame to hundreds of friendships. That the greater amount of this heart-warming kindness may find a more deserving place, it shall be my effort, at this time, to tell what I know of the story of one who has grown up with Kallitype, who has perfected it, and who gives, with pleasure, to any one earnestly desirous of learning the knowledge he has acquired.

Nelson C. Hawks is now seventy-six years young. His eyes are perhaps not as keen as when he invented the point system for the printing trades, but they are as bright and full of humor as those of a boy. His heart beats in accord with any

photographic enthusiast who visits him and he has stories to tell of old times that will some day be incorporated in the history of photography in America, as witness his friendship with the elder Carbutt and his experiments with the first Polychrome plates produced by that clan of dry-plate makers, his travels over the country demonstrating Kallitype, without profit, when "Velox" Cummings was a babe, and F. Dundas Todd still wore kilties. Born in the German part of that German town of Milwaukee, in 1840, he migrated to California early in life and established himself, while still a young man, in the type-founding business in San Francisco. While so engaged, he designed new type faces and invented many epoch-making utilities for the printing industry, but says, with a merry twinkle in his eye: "I was more of a printer than a business man, for I remained poor and retired in 1894 with a home and a family as my sole assets." There seems to have been enough surplus, however, for a trip to Hawaii the

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following year, and there, at the instigation of Professor Henshaw, of the Smithsonian Institute, he invested in a second-hand camera that happened to be available. His interest in photographic processes, however, antedated this event by many, many years, but only then did actual picture making begin. And from this period we enter into the active production of Hawks' Polychrome Paper, a Kallitype product of the purest and simplest sort, but a quite perfect one.

In 1896, Mr. Hawks went into the photographic supply business, opening a little shop on Geary Street. One day an impressive old gentleman entered, and buyer and seller quickly forgot business transactions to become good friends. Armand Rubin, a retired Parisian dyer, had brought from his country to this



THE ROAD TO RUIN (From an Etching)

little shop the photographic enthusiasms of a true amateur, together with a professional knowledge of the properties and capabilities of the iron salts. In those days the anilines had not attained their present perfection; and anyway, the French looked askance at these strictly German innovations. Real indigo was still being used in France, and prints were made on fabrics with iron salts. Quite naturally, Armand Rubin had an excellent basic knowledge of Kallitype and practical experience as well. "This fine gentleman," says Mr. Hawks, "had many new and not a few original formulæ, and on our first and many subsequent meetings we talked them over. Only after several months did I succeed in getting him to come to my home. That day he wrote out for me all his formulæ and left late in the most cheerful frame of mind. No one ever saw him again; and, beside myself, no one seems to have made any inquiries."

A PATRIARCH IN KALLITYPE

With the data thus at hand, experiments went on quite actively. It is best to quote Mr. Hawks verbatim: "The tryouts were often wanderings far from the beaten tracks. I put in any old salt that was handy and got all sorts of results, mostly mediocre. After wasting a deal of time, I got down to trying for the fewest ingredients and the simplest methods, eventually arriving at my present way of doing the thing."

Prints were here shown me that prove my reiterated statement that Kallitype is the equal of Platinum in quality of tone and gradation. There are pure sepias, rich, engraving, brown-blacks, and the truest carbon blacks imaginable. And, mark you, all obtained from the same, one, sensitizer; the difference being



TRANSLATORS OF THE BIBLE (From an Engraving)

secured in the development. One more of my contentions is proven by Mr. Hawks' results, namely, that the hardest and most contrasty negative may be made to yield the softest of prints, while the softest, flattest of negatives may be compelled to give a sharp, contrasty positive by the simple expedient of lessening or increasing the quantity of bichromate of potassium in the developer. This agent has been likened to bromide in the gaslight paper developer, but the simile is not a good one. Bromide influences results up to a certain point and then reacts, and it also degrades the tone. In the iron process, bichromate acts continuously to an indefinite point and in nowise changes the color of the print.

There is so much to tell of this kindly gentleman, so much that would be a pleasure to read, of his sweet personality, his fresh enthusiasm, his activity, and his love of photography, that the temptation is great to dwell upon this personality. But he has enjoined me to use what knowledge he has for the broadest good and to leave him out of it. As he puts it: "You know, I do not

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count in this. The youngsters do not know me, do not care about me. What they want is something they can use; and, bless you, I'm too old to be of much use. So give them the formulæ and the procedure, and be sure to tell them that no originality is claimed; only years of careful experimenting and the final conclusion. It may save them time and expense to take the process up where I have left off."

So here you have the whole thing set forth in plainest terms. I hope some of the workers who have written me such kind letters may feel equally impelled to address a few deserved lines to Nelson C. Hawks, Alameda, California, where every one knows and loves him; and, so doing, let him know he has friends in and of this generation who are with him. He is young-hearted and very human; and, if you could meet him, you should like him as we all do, and I have met him just once.

Sizing: Arrowroot, gelatine or starch, seven and one-half grains to the ounce of water.

Paper: Byron Weston ledger, 23x31, seventy pound, preferred.

Sensitizer:

Water	4 ounces
Ferric oxalate	400 grains
Oxalate potassium	100 grains
Nitrate silver	100 grains

This should be filtered through fine linen and spread with a blanchard brush.

Details: The water must always stand the nitrate test for purity. The amount of oxalate of potassium and nitrate of silver may be reduced to ninety grains each, but always use like amounts.



A STILL-LIFE STUDY

By N. C. HAWKS

A PATRIARCH IN KALLITYPE



THE MAYPOLE

(From Engravings)



BY THE WAYSIDE



EDNA

(Home Portraits by N. C. Hawks)



MISS C.
267



THE GOLDEN GATE (From a Painting)

The above is all there is to the process. I have nowhere seen a simpler sensitizing formula and the results are perfect. There is just one suggestion I make bold to offer. Parson's Scotch ledger of the same or a slightly heavier weight offers the advantage of having no watermark, and there are papers imported by the Japan Paper Company of New York which offer surfaces and textures that give a print distinction not obtainable on ledgers. Also, the papers of the Mittineague Paper Mills, known as Strathmore, are recommended.

Returning to the main issue, the developer is compounded as follows:

Water, hot	18	ounces
Borax, powdered	1	ounce
Sodium tartrate	1¼	ounces

Dissolve the borax first and when the solution is partially cooled add the tartrate of soda. Rochelle salts may be substituted for the latter if desired. To use, take four ounces of the above and add one-half drachm of a two per cent solution of bichromate of potassium. While the above gives a rich, velvety black, the tone may be made warmer, through all the shades of brown, by simply reducing the quantity of borax used; the less borax, the lighter brown.

Here, again, the writer wishes to interpolate: Should a purplish tone be desired, add a few drops of phosphoric acid to the developer as given above. Following are Mr. Hawks' own directions, verbatim:

Printing is the most difficult part of the process, but is easily acquired by a little practice. Expose to direct sunlight; and, as soon as the outlines only of the shadows are visible, the print is ready for development.

Development: The best way is to use two trays of developer; No. 1 to



SHEEP IN THE HIGHLANDS (From a Painting)

contain the normal amount of restrainer, viz., one-half drachm bichromate solution to four ounces of developer; No. 2 to have but two or three drops to four ounces of developer. After exposure, place the print in No. 1 for three seconds only, watching closely to see if the half-tones come up properly. If they do, leave the print in the No. 1 tray, rocking gently till image is fully out. If not, and the print shows too much contrast, transfer it as quickly as possible to No. 2, which will bring up the halftones and detail. Just as soon as these are fully up, place the print back in No. 1 and leave it there for five minutes to clear the whites.

Fixing: After prints are fully developed, rinse them two minutes and place in water, one quart; stronger ammonia, two drachms, for ten minutes. When many prints are to be fixed, it is well to occasionally change from the old bath to a fresh one.

Washing: After fixing, wash the prints in five or six changes of water and then dry between blotters in the usual way.

Finishing: The prints can be mounted either wet or dry, as they remain flat after drying and will not curl.

Platinotypes: To convert a "Polychrome" Kallitype into a pure platinum, develop in the usual way, and then, after washing about half a minute in clear water, immerse in the following bath:

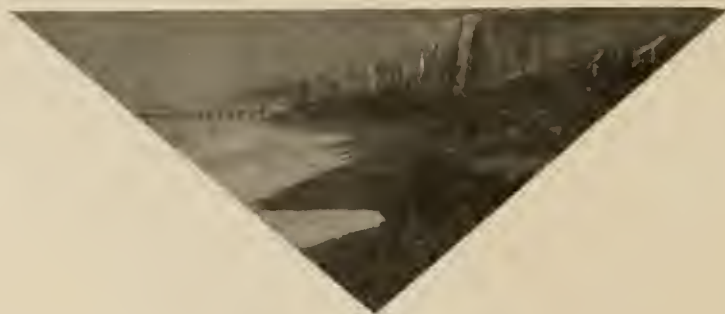
Water	36 ounces
Chloroplatinite of potassium.....	15 grains
Common salt	150 grains
Citric acid	150 grains

Rock the tray until the proper platinum tone is obtained. Then rinse well and fix ten minutes in: water, one quart; stronger ammonia, three drachms, washing as usual.

Causes of Failures and their Remedies: Weak prints, under-exposed; print a few seconds longer. Bronzed prints, over-exposed; the platinotype bath will correct this. Too dark prints, over-exposed; tone in the platinum bath. Impure whites, insufficient restrainer; add more.

Mr. Hawks has gotten out a modest little list of the negatives of reproductions of famous paintings, etchings and engravings that his love for such things has led him to make from time to time, and I believe he is willing to furnish a limited number of Kallotype prints from these at a nominal price. These are recommended to all lovers of fine pictures and especially such as are interested in Kallotype, in that they offer the finest examples of what can be produced by this process from superior copy negatives. Should this publicity, by any chance, impose too heavy a burden upon our good friend, I will take upon myself the responsibility of replying to any excess correspondence that may reach him. The reader need therefore have no hesitation in writing for what he desires to the man whose name might well be Nelson Callitype Hawks. In making this recommendation, my intention is to promulgate all the good his work has produced and to do so more widely than his own modesty has permitted.

The call of imagination is not to be mistaken; it is either stimulated by the scene selected for portrayal or it is not, and if it is not, one may as well, so far as the prospect of an artistic result is concerned, pass on "to fresh woods and pastures new." Imagination is of various kinds, but the most potent that is called forth by landscape may be described as a sense of oneness with Nature in the scene under observation. Every artist must be familiar with this sensation, and the more highly his perceptive faculties are cultivated, the oftener will he experience it. It is as if Nature is speaking to him, and he understands and responds; and when so intimate a relationship is set up, he may hope to be intrusted with some beautiful message, and may set about the task of interpreting it with confidence. But in the interpretation he will express himself—not consciously, but inevitably—and here we get a glimpse of that other kind of imagination that gives a personal character to the work, and enforces the dictum that art is Nature seen through a temperament. If the impression that stirred the observer can be retained, the play of imagination will be felt in the finished picture.—ANTONY GUEST.





Will a Moving Picture Camera Pay?

By J. Wilbur Hill



With Illustrations by the Author

Moving pictures are particularly interesting to most amateur camera users, many of whom have felt, at one time or another, a desire to themselves produce such pictures. Some have hesitated in taking the first step, fearing that the use of other than an expensive moving picture camera and the lack of necessary experience in operating it would make successful results unlikely, if not impossible. To remove this timidity an attempt will be made to show that there are opportunities awaiting those who may invest in a moderate-priced moving picture camera and a few suggestions will be made as to the outfit the beginner will find suited to his needs.

The absence of a moving picture camera, in certain places and at the right time, has deprived the world of viewing, in the realistic form, pictures of many great happenings. Fires, floods, shipwrecks and other calamities would be recorded with all the realism of the actual scene were more privately owned moving picture cameras in use. While the producers who issue news weeklies of world-wide interest have camera men employed for this particular work, many of their pictures are taken some hours after the event, not while the action was most intense. Some time ago a San Francisco newspaper contained the story of a survivor just returned from the scene of an Arctic shipwreck who greatly lamented the absence of a moving picture camera with which he might have recorded his eventful voyage. The pictures, had he taken them, would no doubt have sold, paying him well. He planned taking a camera with him, had ordered one from England, but it did not arrive before his sailing time. The moving pictures of Captain Scott's tragic South Pole journey proved intensely interesting to the public and correspondingly helpful in raising funds for the relief of the widows and orphans of the men who perished. The time is not far distant when the moving picture camera will rival the kodak in popularity, accompanying the sportsman, the hunter and the traveler on every trip. Home-staying folks will make the happenings of today live forever, the familiar scenes that are dear to all being preserved, animated and true to life.

The cost of a moving picture camera should not be considered high when it is remembered that enlargements are easily made from the negative, this making it practically two cameras in one. When only still pictures are wanted, the half turn of the crank gives one six exposures from which to make a selection for enlarging purposes, a decided advantage over the single ordinary negative. Fifty feet of film give one many exposures with little trouble and at small cost. Another advantage lies in the improved definition and greater speed permitted by the small lenses used.

To those who are not already familiar with the moving picture camera, a comparison between the capabilities of the low-priced and the expensive outfits is offered. The former differ somewhat from those used by professional photographers in size, weight and attachments. The low-priced cameras are lighter in weight and are more easily handled, quite desirable features when the operator finds it necessary to walk, run or climb for any distance, unaided. These smaller cameras carry less film than do their big brothers, but for ordinary work this is not objectionable as the operator can carry several extra rolls of negative film quite conveniently. Professional cameras, in addition to having a large film capacity, are equipped with such attachments as a crank making one picture per turn for trick work, reverse drive used in making double exposures, focusing tube through the camera, and the like. These, while increasing the instrument's capabilities and allowing the operator to secure results that would otherwise be impossible, are, however, rarely needed in making the average straight moving picture work. The low-priced moving picture camera meets nearly all ordinary requirements, much the same as does, in ordinary work, the inexpensive 5x7 view camera.

The price of moving picture cameras, including tripod, ranges from forty dollars up; the Alamo being perhaps the most efficient of the inexpensive models. Its compactness makes a strong appeal to those who do not care to carry excess baggage, and its work compares favorably with that of many cameras selling at a much higher price. Somewhat larger and with increased capabilities are the Kinograph and the Ernemann, costing more, yet modest in price and well worth investigating.

The novice should obtain all the reading matter possible pertaining to moving picture photography. Two good books are: "Practical Cinematography and its Applications" and "Moving Pictures; How They Are Made and Worked," both by Frederick A. Talbot, published by Lippincott & Company and for sale here on the Coast by Marsh & Company, of San Francisco, are excellent books, the former selling for one dollar and the latter for one dollar and fifty cents. *The Moving Picture World*, a magazine published in New York, contains a page each week entitled "Moving Picture Photography." It is edited by Carl Louis Gregory, of Williamson Submarine Picture fame, and will prove a profitable investment, one worthy to be read and filed away.

Operating the camera presents no great difficulty, and while developing and finishing one's own negatives is interesting work, it is costly if done in small lots. Firms that supply the requisite material do expert developing and printing at reasonable figures and one should avail himself of such service when the amount of work turned out does not justify the installing of a developing and printing equipment.

Local events offer the moving picture camera-man quite a field for profitable business. One can supply the photoplay theaters in his city with short-run pictures of things of local interest. These theaters can pay twenty cents per foot for such film and show them at a profit. Some camera-men, in dealing with their local theaters, ask and obtain the privilege of adding twenty-five or more

WILL A MOVING PICTURE CAMERA PAY?



SCENES FROM THE HIGH SCHOOL PLAY



THE TRIP TO THE COUNTRY CLUB

feet of advertising film to the weekly run supplied and then secure good prices for announcements from firms wanting high-grade publicity. In one city a country club's opening day was photographed for a local theater by their camera-man. The road to the club passed through a new home tract handled by a live real estate firm. It took but little persuasion to sell the promoters twenty-five dollars' worth of animated advertising, showing the crowds and autos en route to the club through their park. It was subtle advertising, the kind that does not offend. Another photo show had their camera-man take pictures of the classes in a local business college, members of women's clubs, groups of school children, and the like. These short runs were offered on days that were usually dull, resulting in a full house. The theater not only made money, but got the picture-going public talking about their progressiveness. All very commonplace and no doubt easily improved upon by any live camera-man, but they suggest ways of adding to one's income.

The film used is costly when one considers the speed at which it is exposed, and one should guard against any tendency to waste it in making topical work. Exposing during periods in which the action is slow should be avoided. A variety of scenes is what the public want; do not tire them with repetitions. Pictures made close up to the most important parts or parties photographed put ginger into the work and make the film more interesting.

The film concerns getting out national weeklies accept film for inspection and pay from twenty cents to one dollar per foot for that which they see fit to retain. It is shipped to them at the sender's risk. Some of these firms instruct their contributors to wire the head office when something of importance happens and they then wire back advising whether or not to shoot and how many feet they can use. This would indicate that those contemplating sending their work for inspection should be careful to get action and vitality and take pains with the work if they expect to have it accepted. It is well to cultivate an eye for news if one would achieve success in this line.

The local photoplay idea is quite popular in most localities. By getting in touch with those who write scenarios, and almost everybody is a scenario writer now, one can find people desirous of producing photoplays using home talent, and thereby create a camera job for himself. To those who fear their own particular community is free from scenario fans and photoplay actors and actresses, I would suggest a want advertisement calling for scenarios and talent. Unless you have a private secretary, give only your telephone number, otherwise the one advertising will be kept mighty busy handling the result of a quite modest announcement.

Here is a passage from Whistler that should be committed to memory. That keen observer remarks that the artist who has understood Nature's lesson "does not confine himself to purposeless copying, without thought, each blade of grass. . . . but in the long curve of the narrow leaf, corrected by the straight, tall stem, he learns how grace is wedded to dignity, how strength enhances sweetness, that elegance may be the result."—ANTONY GUEST.



The Framing of Photographs

By Charles A. Harris



With Illustrations by the Author

If we may assume as a premise that it is the usual custom of amateurs to submit at least a few of their choicest pictures to the gentle mercies of the picture frame dealer, at one dollar or more per submit, would not the possibility of making one's walls contribute space for a larger number of such pictures, framed by the owner at a fraction of the expense, be interesting?

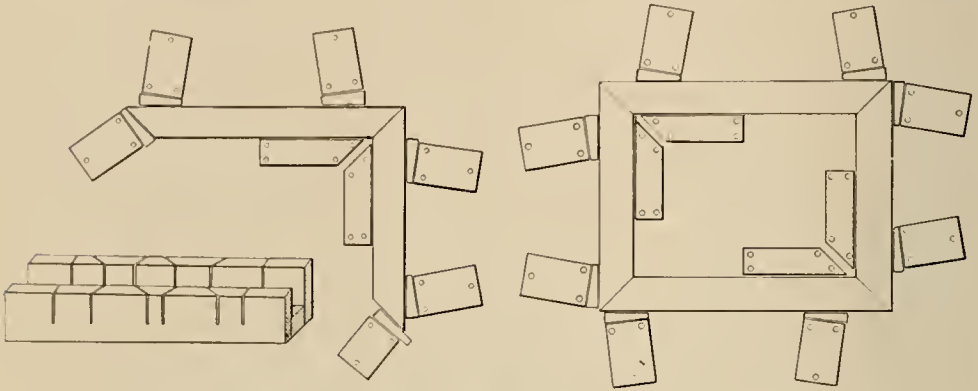
A suitable frame helps essentially in emphasizing and in contributing the necessary completeness and harmony to a print intended for display. Many of our artist photographers now frame their portrait exhibits rather than thumb-tack or simply mount the prints as formerly, and practically all Salon exhibition pictures are submitted framed. While appropriate framing necessitates some knowledge and experience, this the amateur can confidently be expected to acquire, and to such extent benefit, by doing this work for himself. At the same time, he is providing a creditable collection embodying his own ideas by such tasteful selection as he may make.

Let us then see what can be done in this direction, first considering the frame itself. Even to secure nicely proportioned and artistic blending it is not always necessary to use the finished and more or less expensive moulding carried at the regular art stores. We may venture a good guess that all picture moulding is produced in the planing mill with special cutting tools and machines; however, it will be found upon inquiry that many planing mills carry in stock an assortment of moulding that will fill general requirements, to say nothing of scraps, boxwood and the like, ordinarily on hand. There is also usually to be found at the mill or where construction is going forward a pile of discarded odds and ends from which one will be permitted to pick out what he can use, at little cost.

I have secured some pleasing effects by building the frame; that is, by nailing together two or more strips of suitable material. For this reason it is well to have on hand more than one size of the several square, oblong, half-round, quarter-round and other styles of moulding carried at the mill. The regular picture moulding used in house construction makes a good frame in itself. Still other results can be realized with ordinary boxwood strips, nicely planed, or in some cases the rough, unplanned board gives the desired effect. These latter produce frames that are, of course, flat; and, if the wood is more than three-eighths of an inch thick, it is advisable to attach a small, plain beading around the inside, adjoining the picture. Each print should be given some study and the frame made with its requirements in mind. For the average size of print avoid the too heavy and massive style, as a comparatively small moulding

is all that such a photograph will require. Only the large pictures made up of bold masses are suited to such frames.

Before beginning work it will be necessary to construct a mitre box, something that will be found indispensable, not only in making frames, but other workroom products. Take a piece of 2x4 scantling about three feet long and



SHOWING WEDGE ARRANGEMENT AND THE MITRE BOX

nail a like length of 1x6 board along both two-inch sides, thus forming a U-shaped trough. As it is rather hard to make the necessary true and straight cuts by hand, one should take the box to a carpenter shop and have the two angular and one or two cross cuts made with a mitering machine. If two sets of angular cuts are made, as shown in sketch, the life of the device will be doubled. While sawing the true cuts is the only difficult part, one can, if preferred, order the mitre box complete from the carpenter. One will also require a supply of liquid glue and an assortment of small-headed brads and wire nails. The easiest and simplest form of frame construction, one avoiding mitered corners, is made by taking, say, strips one-half inch thick and of the desired length and then cutting away half the thickness from each end and so form lapping joints that are glued and then bradded, the latter being done from the back so as not to show on the front. Where nails are unavoidably driven from the front of the frame, they should be countersunk and the holes filled with putty to give a smooth finish. Such a frame can be extended so as to accommodate several pictures, either in a row or one above the other, a narrow strip of wood being mortised in the frame between each picture.

The mitered joint or corner is an improvement, although a little harder to negotiate. The chief difficulty will be found in joining the corners neatly and firmly. Supposing an 11x14 frame, after the ends of the four pieces have been mitered in the miter box, lay down a long and a short piece of moulding, their ends in contact to form one of the corners. Then from some inch stuff prepare eight or ten wedges two and one-half or three inches in length. The wedge to bind well should taper only slightly; for a three-inch wedge make one end an inch in width and the other about three-quarters. If the problem be one of quite a small frame, of light material, the wedges can possibly be made a little smaller with advantage. Also, in addition, a like number of oblong pieces to be

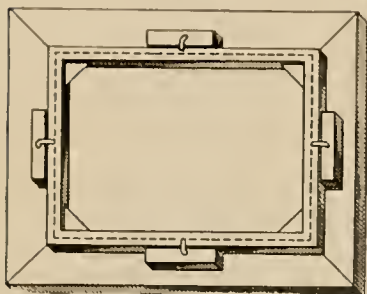
THE FRAMING OF PHOTOGRAPHS



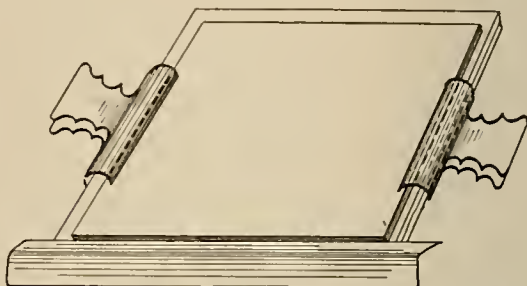
SOME OF THE FRAMES MADE AS DESCRIBED

used with the wedges as shown. Several strips with straight edges are then mitered on one end. These, in length, should be proportioned to the dimensions of the frame as indicated in the drawings. The blocks are now nailed to the bench along the outer edges of the frame sections, in such a way that they shall be the right distance and angle to permit of the wedges being placed between. The two wedges acting on the same strip should be driven in opposite directions. The mitered strips just described are also nailed to the bench, two being placed at right angles with space between their beveled ends and in contact with the inner edges of the frame, wherever a corner is to be joined. The accompanying sketch shows the position of the strips, wedges, etc., suitable for uniting the two pairs of the frame. This provides us an adequate holding device, to some extent adjustable. When everything is ready, the blocks, etc., all arranged in the proper position, it should not prove difficult to glue the joint, lay the two sections of the frame in place, lock securely by means of the wedges and nail the corner together. If, in driving the nail, one or both of the strips are forced slightly out of position, a tap on the proper wedges will readjust the corner and hold it in place. The position of the wedges and strips will, of course, require changing, particularly as the ends of the moulding become themselves formed corners. This second position of frame and wedge units is also shown in sketch. The two pairs of strips are first joined and then these two sections united to form the frame. When cutting the strips for the frame, always measure the length along a line corresponding to the inner side of the rabbet that receives the glass, if the frame is to be glazed. If the moulding used will admit of it, cut a rabbet around the inner portion to accommodate the glass, print and backing; but, if the moulding is not of a character to allow for this, the recess can be formed by bradding a small square strip around the back of the frame. Glass may be chosen in special cases, but the particular emphasis here is with reference to framing the print mounted upon a cloth-covered stretcher, in which case the

glass is not required. The sheet accompanying Eastman's bromide paper explains how this mounting is done. It reads: "Enlargements are usually mounted on cloth-covered strainers as follows: Take a frame, such as artists use for stretching canvas, and cover it with common white cloth; put the cloth on dry, stretching it tight and tacking along the edges. Lay the wet print face



THE STRETCHER FRAME



PASSE PARTOUT BINDING

down on table covered with oil cloth or rubber cloth or sheet of glass and squeegee off the surplus water, then brush over the back with thin starch paste, give the cloth on the strainer a coat of paste, lay the print on the strainer, then turn the strainer and print over and lay face down on table or glass and rub in contact with soft cloth, then turn the strainer over and cover with a clean piece of cotton cloth and rub in contact with hand or soft rag; rub under the frame with a paper or palette knife and remove what paste may have come through the back of cloth under the frame. When dry, the print will be stretched smooth and tight."

It is rather better not to trim the prints and then, if it seems desirable to have a mat, there will be more of the margin of the print that will be serviceable. As a general rule the mat is omitted for this style of framing, but when used, should be cut from suitably tinted material and pasted in position directly upon the mounted print.

The stretcher frames can be made from strips of wood about five-eighths to three-quarters inch square according to size of the picture; what is wanted being of sufficient rigidity not to bend and yet not be too cumbersome. If one will remove the thin strip of wood from the lower edge of an ordinary window curtain, he will find it slightly beveled. By placing this in the miter box with the piece being used for the stretcher on top, the corner can be so cut that when the stretcher frame is nailed together the outer edge will be somewhat higher than is the inner one and the cloth will touch the frame only along the extreme edge. This provides an excellent stretcher, the cloth being drawn tightly over and around the outer edge of the frame and tacked on the inner side. In this way the cloth will be uniformly stretched, with no slack between the tacks. This frame I make of such dimensions that there will be a small margin of cloth around the print when mounted. After the print is mounted and dry, paste a piece of brown paper over the back of the stretcher to keep out the dust, etc.

To attach such a picture to the frame, cut four pieces of the stretcher frame material, each about six inches long, and nail them on the back of the frame

THE FRAMING OF PHOTOGRAPHS

proper, one in the center of each of and in close contact with the outer edges of the stretcher frame, as shown in sketch. Then drive a small-headed wire nail half way into each of these blocks and bend them at right angle over the stretcher frame. These hold the picture securely and also permit of its easy removal by simply turning the bent portion of the nails to one side.

Now a final word regarding the treatment decoratively. In the first place remember that all painting, staining, etc., is best done after the different pieces are cut but before they are joined together, for the reason that it is quite difficult to treat a completed frame in an even and smooth manner. As to the particular finish used, one should be influenced by the print, the subject, and the tone or color. Personally I prefer the wood stains obtained at the paint or art stores, finding them well adapted to the purpose. These stains are recommended as permanent and can be had in imitation of mahogany, walnut, cherry, Flemish or green oak or ash and a variety of others. By dilution of the various colors, one can secure almost any shade desired to harmonize with the tone of the print. Usually it is best to frame the print in a darker shade of the same color. For a dark black and white print use a jet black or very dark mahogany color. In some cases a gun metal or dark gray will harmonize, particularly with the grayish bromide prints. Some landscapes in black may look well in a frame of rough, unplanned wood, stained to give a sort of dark green or rustic effect. Again, a picture of a child or young lady, especially if tinted, may look well in a gold frame, the gold paint coming in a liquid form that is easily applied. The general run of photographs being of matte finish, the frame should be treated to correspond. The wood stains produce this dull finish effect; and, when there is grain in the wood, the results are all that could be wished. There is also the wax finish that can be applied after the article is suitably stained, when a smooth and polished surface is desired.

Under the head of framing we should not overlook the *passe partout*, a style that is a favorite with many. It consists of binding together the glass, mat, print and backing, using gummed paper tape as in binding up a lantern slide. One suggestion occurs to me and that with reference to the rings used for suspending. It is best to have two rings rather than one, minimizing the trouble of getting the picture to hang evenly. Before binding up the picture, cut two slits in the cardboard backing, each an equal distance from its respective side and equal distances from the top. A short piece of domestic tape is then folded in the middle, a brass ring inserted in the fold, both ends of the tape drawn through the slit, separated, and pasted out flat in opposite directions on what is the inside of the backing. This gives absolute security to the rings on the outside. A good way to secure an even and perfectly straight margin of the binding strip is to cut a piece of thin cardboard about one-quarter of an inch smaller all around than the glass, then making sure that the glass is spotlessly clean, assemble all the parts to be bound with this guide card centered on top, holding all together with a film clip on both short sides. This leaves a quarter inch of exposed glass on the two long sides, indicating the exact position for applying the gummed strip, the card forming a straight edge or guide. Change

the clips to the two bound sides and proceed with the other two. The corners are finished by running the tape straight across in binding the two long sides and trimming the ends of the two short strips of tape at an angle before pressing down. This gives the effect of a mitered corner and saves one the task of matching, perfectly, when both pieces are cut at an angle. Be sure the glass is spotless before binding. Window transparencies can also be bound securely by this method when the usual metal frames are not at hand, suspension being arranged by running a small brass chain around the outer edge, with a link at each corner of sufficient size for a small section of the corner to be inserted. The two ends of the chain at the top should be attached to a brass ring.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

BLUE PRINTS: F. H. Latimer, in *The Engineering News* (date not recorded, but it must have been over twenty-five years ago), says that the ordinary blue print solution is rendered more sensitive by the addition of oxalic acid. The formula he recommends is as follows:

A: Iron ammonia-citrate120 grains
 Water 1 ounce

To this is added solution of stronger ammonia till the smell is quite perceptible.

B: Potassium ferricyanide105 grains
 Water 1 ounce

C: Acid oxalic 30 grains
 Water 1 ounce

Separate, the solutions will keep indefinitely, but should be mixed only just before being used.

To make the sensitizing solution, mix equal parts of A and B, and to each ten parts of the mixture add one to three parts of C. The oxalic acid should be used with caution, as an excess will tend to degenerate the whites.—Theo. E. Peiser, California.

BLUE PRINTING: Another old-time formula, contributed by G. Lewis Holmes to the *Photographic Times*, reads as follows: I have made in the past few years some thousands of blue prints, and I have found that success depends not so much on formula, paper, or careful spreading of chemical as on drying it quickly after preparation. I use the following formula and Saxe or Rives paper, and dry it near a stove or steam radiator.

Mix in one bottle a solution of two and one-half ounces of water to each one ounce of citrate of iron and ammonia, and in another one ounce of red prussiate of potash to each eight ounces of water; these solutions, if well corked,

will keep indefinitely. It is not necessary to use it by gas or lamplight; daylight is safe if you are at all careful. Mix one part of the iron solution with two parts of the potash just before using, and with a soft sponge flow over the surface of the paper a heavy coat, so heavy that it stands in small puddles all over it; then squeeze the sponge quite dry and remove the surplus chemical, stroking in one direction, which will leave the paper covered with a smooth, even coat and nearly dry; hang it before a stove, radiator, or over a register, face toward the heat, and when dry the back should not show any signs of soaking through. When dry, it will keep well in a dark, dry box, and will make clear, brilliant prints. It is even better twenty-four hours after preparation, as it does not fade so much in washing. These can be turned to a beautiful green by printing very deeply and placing after washing in a weak sulphuric acid solution (acid must be very weak), and may be bleached white by the use of a solution of sal soda.—Theo. E. Peiser, California.

COPYING PHOTOGRAPHS: I do quite a little copying and an experiment that I tried some months ago has been of the greatest value to me in determining proper exposure. From various sources I collected ten photographs of different tone and depth, tacked these on a large card and copied them all together, giving two different exposures on ordinary plates, two on orthochromatic plates and two on like plates with a ray filter on the lens. The six plates were all developed in my regular developer used in a tank for the usual time. The resultant negatives gave me much valuable information. I found that certain kinds of prints required double the time of others, that the plain plate answered best for some, the ortho for others and the ortho with screen for the remainder. I learned just what kind of prints required certain treatment and was really surprised at the wide difference between the best and the poorest results secured from any given piece of copy. Dark or red toned prints require much longer exposure than do light or blue toned ones, but the most surprising discovery was that the average sepia-toned print has so much blue in the shadows that it copies entirely unsatisfactorily unless an ortho plate and yellow screen be used.—E. R. T., Washington.

TIMING ENLARGEMENTS: The worker who does enlarging should learn to count time rather than depend upon a watch or other timer. Very frequently one wishes to do a little dodging or shading, and if he can count seconds, he is relieved of the necessity of watching some timing device and can use both eyes for the work. Counting as Mr. Steadman recommends for his exposure system answers admirably, namely one-thousand-one, one-thousand-two, and so on. By counting in this manner while watching the second hand of a watch, one can soon fall into the right speed so that he can count a minute or more without a variation of more than a second.—W. E. R., Tennessee.

RESTORING PRINTS FOR COPYING: Many prints are brought to the photographer to be copied that are rather faded or otherwise lacking in strength. Where this is simply a matter of the image being yellow, it will be a gratifying surprise to make a negative from the print, as the yellow image will photograph

nearly as strong as would a black one. On the other hand, where the paper has yellowed, the task becomes a more difficult one. In such cases it is advisable to try well washing the print and then immersing it in a slightly acidified, strong solution of mercuric bichloride. This for gold-toned prints, as the gold image does not bleach, while the yellow of the print is generally cleared away. The bath is rinsed out of the print and, aside from a slightly warmer tone, there is no other change, while the treated image is just as permanent as before.—A. S. D., Florida.

AN ADHESIVE FOR GLASS: Like many others, I paste strips of black paper on my printing glass in such a way that films slip under from the near or lower side and print with a white margin. The heat of the light chamber causes these strips to gradually loosen and come off, creating annoyance. Thanks to a hint given me by a friend, this trouble was easily overcome. I simply dissolved about half a cube of sugar in a spoonful of hot water and added it to the glue used, the contents of a can holding about three or four ounces.—T. G. B., New Mexico.

REMOVING RUST FROM NICKEL: If the rusting is only slight, give a coating of grease, allow to remain several days in a warm atmosphere and then rub off both grease and rust with a cloth that has been dipped in dilute or washing ammonia. Where the rust is deeper, rub with a cloth dipped in diluted hydrochloric acid, immediately washing off before the acid has time to act upon the metal; a good polishing following. Rust of this kind is really an indication that the nickel plating has been worn off, and it is advisable to have the article replated.—E. D. C., Vermont.



An Opportunity for I. P. A. Members

That enthusiastic member of the International Photographic Association, Carl S. Carlsmith, has been appointed Chairman of the Photographic Section of the Fifth Annual Civic Convention and County Fair to be held at Hilo, Hawaii, T. H., September twenty-second and twenty-third next. Through his efforts there will be awarded a first prize of ten dollars cash and a suitable second and third, for the best three collections of ten or more pictures by I. P. A. members. The announcement heads the I. P. A. page, and we hope that the special consideration thus shown by Mr. Carlsmith and the Fair officials will be appreciated to the extent that they may have an exhibition of the work of the members that will be a credit to all concerned. We trust that every pictorial worker in the Association will send in a set of prints; and we would suggest that, if so doing is possible, the senders of prints decline the kind offer of return without cost and place their prints at the disposal of Mr. Carlsmith instead. This recommendation of ours will no doubt be resented by that gentleman, but it will be too late, when this reaches his eyes, for a withdrawal thereof. We feel quite sure he can make better use of the prints than as a source of trouble and expense in being returned, hence the suggestion.

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The Bewildered Beginner

When the average individual "takes up" photography, he finds a wide range of information concerning numerous methods and processes, these even sometimes at variance one with another, with the result that he becomes confused. Not infrequently do we receive inquiries from beginners that plainly indicate that they are vainly trying to encompass entirely too wide a field, trying to master entirely too great a number of special branches with which they have no real concern until the elementary difficulties have been met and conquered. If such enthusiasts will but curb their ambition and allow experience to teach them that photography does not demand any great amount of special skill or study when gone about in a modest way, their path will be easier and photography will be found a delightful hobby, pastime, or what one may wish to make it in his own individual case. As experience is gained, skill, of a degree or kind depending upon individual capabilities, naturally follows. This brings them to a point where the wide outlook that photography presents but adds to their interest without bewildering them as it at first does.

One of the first beginners that we ever had the pleasure of helping along the photographic road came to us with a heavy 8x10 camera, an old timer that weighed about as much as four of the present-day ones, a good lens innocent of shutter, and a dozen plates. These last cost, at that time, three dollars and sixty cents, a sum that represented nearly all his pocket money allowance for two weeks. Fast shutters, anastigmat lenses, color filters, innumerable developers, plates, papers and processes did not cause him any anxiety simply because there was not then that wealth of material on the market. All he had in mind was the making of a good negative and a good print therefrom. Every exposure cost thirty cents for the plate alone, an amount that represented his allowable expenditures of pocket money for two days. It is hardly necessary to point out that but very few of these plates were wasted, and it is equally useless to explain that there was not a single operation, from loading the holder to drying the negative, that was not thoroughly understood and carefully carried out by my beginner friend, after the first lesson. He had to know just how and why everything was done, and he took good care to do it in the proper way. With each exposure costing him thirty cents I am convinced that he learned more about photography at a lesser cost and in a shorter time than do ninety-nine per cent of the beginners of today.

We realize fully that the major portion of our readers are not tyros, but does the fact that one has used a camera for several years invalidate the applicability of the suggestion made? Are there not a few professionals even who might well adopt the plan of starting at the beginning and mastering one thing

at a time? Would it not profit every photographer to take stock of his own capabilities and then start out with a firm determination to make each such as perfect as possible? Take the average worker and you will find that the proper timing of an exposure is at least sometimes a matter of doubt. This should not be so and need not be so if one will but master some one of the many good exposure calculators on the market. Once the matter of timing is right, let him turn to the other factors that affect the resultant negative. Under some conditions a lens shade is a necessity; under others a backed plate desirable; under still others an orthochromatic emulsion is required, and so on through the list. And, as pointed out, these come up, these questions of the proper procedure, right along in one's work. All that is required is the thorough understanding of the situation and the reason for the procedure adopted, as each difficulty presents itself; in other words, the mastery of the matter at that time, once and for all. Putting this plan into practice for a year should, with the ordinary use of the camera indulged in by the average worker, make one not only a much more capable photographer, but a photographer who could then consistently interest himself in one or more specialized fields and do so upon a foundation that would make for success and satisfaction.

Our Farm Paper Cover Competition

We feel a little more hopeful at this writing. Not a few, at least a dozen, have sent in several prints of their recent making, prints from negatives made purposely, asking, as one of them most fittingly expressed it, if he were "headed in the right direction." As these were made before our last issue could have reached our good friends, their letters and pictures anticipated our suggestion in the June number, which last we hope will bring us a number of like indications of interest in this competition. We are only too glad to help. All of those who have asked us to do so are "headed in the right direction," and we have every hope of their "arriving" in good season. They all find the work most interesting, while several confess that they find it not nearly so easy as they had supposed from the seemingly unstudied effects in the pictures actually used by the farm papers examined. It is this unstudied effect, this lack of self-consciousness in the subjects, this entire absence of any indication that a camera had intruded itself upon the scene, that makes for success. Lack of this necessary quality is the one thing that characterizes practically all of the work sent in for our last competition, and those intending to submit something would do well to bear this in mind. Next month we hope to present an excellent article from Mr. Blanchard, one telling you what he has found acceptable by the editors of farm papers, together with reproductions of a dozen or more of his own pictures that have been sold for and actually used as farm paper cover illustrations.

Where the decorative quality is given predominance, naturalistic representation has to be sacrificed. More generally, and doubtless also more appropriately, in the case of photography, the decorative arrangement is kept in subjection to, and is used for the purpose of enhancing the grace of the figure.—ANTONY GUEST.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Etching a Pinhole

Bertram James, in *Photography*, suggests a novel way of making pinholes, which is here reproduced. As an old pinhole worker, the idea appeals to me because punched pinholes, unless they are made in copper plate of extreme tenuity, have the form of tunnels rather than apertures; that is, their length is often greater than their breadth. The etching method here used should completely obviate this. The only doubt that arises in my mind is as to whether the extremely thin center can be maintained without fringing. Mr. James says:

"An easier way than punching for making a very fine pinhole is to etch it in a thin sheet of copper, since this will give a hole without any burr. The etching fluid may be made by diluting two drams of hydrochloric acid to make one ounce, and then dissolving in this liquid as much potassium chlorate as it will take up. The copper is thoroughly cleaned, and dipped into hot melted beeswax. It is taken out, and when quite cold, the smallest possible spot of metal is laid bare with the point of a fine needle, making quite sure that there is no wax left on it. A drop of the etching fluid is put on the spot so cleared, and after the lapse of a minute or so is rinsed off under the tap and a fresh drop put on it, and so on until the hole is formed. Prolonged etching will enlarge the hole. The progress of the work should be watched with a magnifying glass. A series of holes may be made and the copper cut up afterwards with a pair of scissors. The wax is then cleaned off and the copper blackened either chemically or by holding it above a candle flame for a moment. For very fine holes I find this method is preferable to any that involves the use of a punch."

A Useful Lens Formula

Among the many lens formulæ often quoted, I do not remember, writes I. L. W. in the *Amateur Photographer*, having seen that

about to be given, yet it is one of the most useful that one can keep in mind. A six-inch focus lens is seven and one-half inches from the plate or image. What is the scale of the object to its image? Can you answer this offhand? Subtract six from seven and one-half, getting one and one-half; then divide six by one and one-half, getting four; the image is therefore one-fourth the linear size of the object. Now suppose the image measures one inch on the ground glass, then the object being four times as large must be four inches. Next, as it is four times the size of the image, it must therefore be four times as far away from the lens than the image is, i. e., the object is four times seven and one-half inches; i. e., thirty inches from the lens. Now suppose that a five and one-quarter inch focus is five and one-half inches from the plate. We subtract focal length five and one-quarter from the camera, or plate-to-lens distance, getting one-quarter as difference. Dividing the focal length five and one-quarter by this one-quarter difference we learn that the object is twenty-one times the linear size of the image; and is twenty-one times as far away; i. e., twenty-one times five and one-half; i. e., one hundred and fifteen and one-half inches, or nine feet seven and one-half inches away.—*British Journal of Photography*.

Light-Obscuring Powers of Glass

There are so many circumstances in which the practical photographer's work is affected by the light-obscuring qualities of various kinds of glass that every one concerned should be familiar with certain facts on the subject. The knowledge gained may be applied to advantage in a great many directions, while to overlook or imperfectly appreciate these light-diminishing factors will often prove a considerable hindrance. The following table showing per cent of light obstructed, compiled from authoritative sources, is based upon experiments made

with gas light passing through glass globes of average thickness and of regular commercial quality. The figures quoted may be taken as sufficiently correct for all practical purposes; the approximate percentages given having been proved in practice to be absolutely dependable:

Clear glass (white).....	10 to 12
Same with patterns ground on.....	24 to 25
Surface half ground and half clear.....	35
Surface ground all over.....	40
Plain opal (white).....	60
Opal (partly painted or colored)....	65 to 70

These figures must be understood to apply only when the glass through which the light passes is clean; any dirt, if only the thinnest coating of dust, will materially add to the percentage of lost illumination. It should also be borne in mind that, apart from the loss of intensity of light, the actinic value of the illuminant will be affected to a varying degree according to the tint or color of the glass through which the light has to penetrate.—F. H. B. S. in *Amateur Photographer*.

A Cheap Bleach for Sulphide Toning

In reference to the cost of bleach for sulphide toning, it is difficult to reckon up the cost of the ferricyanide mixture, as it is usually used repeatedly and strengthened occasionally, but I think it may be said that in practice the following, at almost one-twentieth of the cost of ferricyanide-bromide, will do equivalent work and with equal rapidity:

Ferricyanide	10 grains
Bromide	15 grains
Water	2½ ounces

The cost of this at present prices is about thirty cents.

Permanganate	2 grains
Sulphuric acid, commercial....	20 minims
Common salt	1½ to 2 drams
Water	8 ounces

This costs about one and one-half cents. With hydrochloric acid the cost is a little more. But cheapness is not the only advantage of the permanganate. Consider the following: No need to get rid of the last traces of hypo; no possibility of blue spots, which often occur with cheap bromide papers; no washing between bleaching and sulphiding; stock solutions keep perfectly, while the mixed solution will keep a week or two in a bottle; bright prints due to purity of

tone; and the ease with which good intermediate tones between warm black and full sepia brown may be obtained by partial bleaching followed by sulphiding. For this last purpose the bleacher is used half strength, and for warm black the print, which must be thoroughly soaked with water, is flooded with the bleacher for ten seconds, not longer, before sulphiding. For other tones, bleach longer.

I may add that the permanganate bleacher is generally regarded by all who have tried it in this neighborhood as in every way preferable to ferricyanide.—T. H. Greenall in *British Journal of Photography*.

A Stereoscopic Illustration

The audience at Sir James Mackenzie Davidson's Friday afternoon lecture at the Royal Institution found themselves provided with red and green spectacles, in order to illustrate a stereoscopic effect. Two little electric bulbs were placed side by side on the demonstration table, one of them being surrounded by a green film of gelatine, and the other by a red film. Each bulb then cast a shadow of the object—an interposed cone of wire, the shadow of which was thrown onto a screen—from slightly different points of view, so that there were both a red shadow and a green shadow of the cone. By means of the red and green spectacles, each eye was made to see its own image, and the combined shadows gave an impression of solidity, the shadow of the wire cone appearing in relief, just as though the actual object were being viewed. On turning the glasses round so that the eye which had the red glass in front of it now had the green glass, and vice versa, the perspective was reversed. The method, while not new, furnished an extremely graphic illustration of stereoscopic effect.—*Amateur Photographer*.

Mercury-Iodide Intensifier

"In running through a recent issue of the *British Journal*," says W. Guttenberg, "I noticed a description of a new intensifier, and, much to my surprise, found it identical with that I have used since 1881 or 1882. I was then in America, and the formula was published in the instructions given with Cramer and Norden's plates. They were the earliest plate-makers over there, and in all these years I have not come across one to equal it, and have given the formula to many

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friends here since I have returned. My formula is much more practical than the one you gave, as I start with one ounce of iodide of potassium, and dissolve it in about five ounces of water. I then add the bichloride of mercury until the red precipitate of iodide of mercury does not re-dissolve. I then add a little of any fresh solution of hypo while stirring it until the red precipitate is again dissolved, and then make up to twenty ounces with water. This can be used repeatedly until exhausted, but care must be taken to place the intensifying dish on a dry board, so as not to get foreign matter into it on pouring it back into the bottle. Another important point is, when removing the yellow iodide of mercury, to see that it is quite gone by examining the glass side of the negative, so that intensifying should only be done in daylight. It is not at all necessary to immerse plate in any developer to guard against fading, as I know if operations are thoroughly performed the image is perfectly permanent." To this the editors add: "The intensifier is that introduced in 1879 by the late B. J. Edwards. It is interesting to hear what our correspondent says as to the permanence of the results obtained with the formula since the general experience with this intensifier is that negatives gradually change to bright yellow color, but can be darkened again with Schlippe's salt."

Fine Focusing Screens

Under the above title, *The British Journal of Photography* reprints the three following excerpts from previous issues. Gathered in this manner, they should prove interesting to those who may wish to make their own focusing screens.

Carborundum powder, obtainable from any ironmonger, may be relied upon, if the finest and purest quality is used, to produce a first-class focusing screen in a very short time. With the exception of the powder, the only thing wanted is a "rubber," which consists of a piece of glass fixed with Seccotine to a block of wood, which serves as a handle. In use the glass to be ground is wetted, a little powder is thrown upon it, and then the rubber is brought into play. Of course, the surface of the rubber becomes ground as well as that of the plate, and when it is in this condition it works at its best. The time required depends on the size of the rubber.

Using one about two inches by one, a 4x5 screen can be completely and perfectly ground in five minutes or less. For large sheets a larger "rubber" is required, and one of the best is a cutting shape fitted with a handle. One that is chipped and useless for trimming purposes will act excellently. A most useful application of the "rubber" is for grinding the backs of lantern or stereo slides. The former are sometimes, and the latter nearly always, all the better for being on ground glass, yet transparency plates on ground glass are not always available. A second cover glass is the usual expedient, but this adds unnecessarily to the weight and thickness of the slide. In view of the possibility of wet and dirt getting on the film side of the plate during the grinding process, it is very advisable to formalin, dry, and varnish the side before grinding. Put the slide in a printing frame, glass slide out, and grind with a small rubber. Take care that the slide is well backed up, and that the springs are strong enough to hold it up against the rubber. It can easily be packed up with a few spare or spoilt plates, or with cardboard, and then there will be no fear of the plate giving from the rubber, and so letting wet in under the frame rebate. When ground, the glass is cleaned while still in the frame, and on removal the film side should be found to be perfectly clean.

A series of three screens for general and special work is obtained as follows: Take three extra rapid plates and immerse them without any exposure at all in any non-staining developer free from bromide. At the end of five minutes remove two plates and fix and wash them in the usual way. At the end of twenty minutes remove the third plate from the developer, and fix and wash that also. Next iodize this third plate together with one of the others in a solution of iodine in potassium iodide. When the action is complete, rinse the plates and bleach them in dilute ammonia. Then wash and dry. Finally, take the remaining plate and immerse it in a solution containing ten grains of potassium bichromate, and five grains of hydrochloric acid to every ounce. When the chlorizing action is complete, rinse the plate and put it into a fresh plain hypo fixing bath for ten minutes; then wash well and dry. You now have three screens of different degrees of density. No. 1 is a dense iodide

screen, No. 2 a thin iodide screen, and No. 3 a thin "chromium" screen. No. 1 screen will be an excellent substitute for the ground glass in all ordinary work. It can be used without a magnifier or with one, and in either case it will show detail that would not be visible on a screen of ground glass. No. 2, the thin iodide screen, cannot well be used without a magnifier, but while it is too nearly transparent to permit focusing with the eye alone, it shows enough grain to render the use of the magnifier easy. There is no accommodation difficulty, and the detail visible on the screen is a revelation to those who have never used anything but ground glass. This screen is of special value for indoor work, such as architectural interiors and copying. No. 3, the chromium screen, is quite useless without a magnifier, being almost transparent to the eye. But with the magnifier a very fine grain becomes visible, and as it is perfectly easy to keep this grain and the image in focus at the same time, there is no accommodation difficulty. This screen is a substitute for clear glass, and is especially adapted for copying and for low-power photomicrography. For high-power work it does not seem possible to find any good substitute for clear glass, but with moderate powers the No. 3 screen seems to show almost as much detail as the clear glass, while it has not its disadvantages. The screens can be ruled in pencil or with fine cuts to give datum marks. We prefer a cross ruling of fine cuts made with a lancet, but this is only a matter of personal choice. If the cuts are adopted it is as well to give the screen an after coating of celluloid varnish. The surface is somewhat readily abraded in the case of No. 2 and No. 3 screens, hence they should be carefully used. It must be remembered that no fine grain screen shows such a bright image as ground glass. In comparison the image looks dull, but this is a very minor matter, and the extra detail visible far more than compensates for the loss of brightness.

Douglas Carnegie, writing in reference to the fine focusing screens made according to the formulae given above, says that though the latter give much more detail than ground-glass screens, yet they labor under the disadvantage that, with the exception of a small portion of the image which happens to lie in the neighborhood of the line joining the eye with the optical center of the lens, the image

as a whole is much dimmer than in the case of the coarser ground-glass screens, and, therefore, the eyes must be very carefully shielded from extraneous light, in order to permit of the composition and proper centering of the picture on the screen.

A novel screen is made as follows: A plate which has been exposed in the camera to a uniformly lighted sheet of paper is developed, fixed, and then placed in a bath of hydrogen peroxide acidulated with sulphuric acid. The bath is warmed to a temperature of about twenty degrees centigrade. In a short time the hydrogen peroxide removes the developed silver and concomitantly some of the gelatine in which the silver was embedded, leaving the remaining gelatine in a very faintly opalescent condition. The plate is now washed, treated with Farmer's reducer if it still looks brown, and dried. A screen so made has just enough optical irregularity to prevent the image being viewed through it, but not enough to militate against the presentation of very fine detail in the focused image. There is sometimes failure to get a good screen by this process even when observing the same conditions that in previous trials had led to satisfactory results.

A method of focusing, which avoids the trouble of "accommodation," which takes place when a magnifier is used with a focusing screen, containing a transparent patch, is as follows: The screen used is a plate of glass fairly heavily ground all over, with a view to a bright general image, with the exception of a small circular central spot, which is left transparent. Such a screen is made in a few minutes by sticking a small washer on the center of the plate and grinding round this with carborundum powder, using as a muller a small piece of flat glass to which a slab of wood has been stuck to act as a handle. A small strip of tinfoil cut with a razor is stuck across the transparent portion of the screen. On the unground surface of the glass, just over the region of the transparent disc, a small adjustable magnifier of about half-inch focal length is permanently fixed. (The magnifier actually used was constructed from a cheap linen tester.) The magnifier is focused on the edge of the tinfoil slip and set. It is not necessary to bestow any especial care on this adjustment. The screen is now racked until there is no apparent relative movement, parallax, be-

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tween the edge of the slip and any selected portion of the image seen through the magnifier when the eye is moved laterally across the field of view of the magnifier. This being the case, the lens image must of necessity lie precisely in the plane of the front surface of the screen. The function of the magnifier here, it will be noticed, is not to aid the attainment of that very uncertain condition, the exact position of clearest visualization of fine detail in the image, but simply to magnify a displacement. Hence there can be no complications arising from unavoidable accommodative changes in the eye.

The delicacy of this method of focusing, virtually a "null method," is quite surprising; the most insignificant rotation of the focusing pinion from the position of zero parallax produces an easily perceptible relative displacement of the fiducial mark and any selected image detail.

The Use of Photographs

D. Waldo Ross, in his book, "Drawing and Painting," published by Houghton, Mifflin & Company, New York, writes as follows:

"The modern painter has in photography an aid to study, which the old masters did not have. They had only their drawings, studies and sketches to refer to. We have photographs also which, if properly used, ought to mean for the modern painter more knowledge of Nature than any painters have ever had.

"It is easy for the student to waste a lot of time studying books of anatomy and trying to remember the names of bones and muscles, as if he were going to talk about them instead of drawing them. If the time spent on books of anatomy were spent in drawing from photographs of the figure in its different attitudes and movements until these attitudes are well understood and can be recollected in the terms of vision, the student would have his anatomy in a form available for his purposes. He could not talk about it, but he could draw it, and that is what he wants to do. Drawing from life is far more interesting and exciting than drawing from photographs, but models are difficult to get and expensive, and I am sure that one can become an able draughtsman using photographs and drawing from them in tracing-size, always following the eye, and avoiding all mechanical methods.

"If we are going to paint life as we see it, not still life in the studio, but the real life of the outside world, which is certainly not still life, the camera will be found indispensable as a source of knowledge and information. It will be a record of certain facts and a record which may be referred to at any time, as the facts may be required. When the painter has in a photograph the facts he wants, he should draw from the photograph until he knows the facts visually and can recollect them visually. In order to get the facts clearly in mind, he must, however, when he draws from the photograph, draw always in tracing size. It is only when he draws in that size or scale that he gets his knowledge in the form of visual images and available for his purposes. If the photograph he is drawing is very small, an enlargement should be made. He can have the photograph and his drawing at the same distance from the eye, in which case the drawing is in the scale of the photograph, or he can have the photograph further off and make a drawing which will be smaller in scale than the photograph. Having a small photograph, he can hold it close to the eye and with his paper at a distance he can draw the subject larger in scale than it comes in the photograph.

"It is only a very small part of Nature and Life that can be pulled into a studio and made available for drawing and painting, and it is difficult, drawing and painting in the studio, to get the model to be still, unless the pose is a very easy one. Many interesting poses are impossible to hold or to recover when they are lost. Children are particularly troublesome, as everybody knows who has tried to draw them. They are so attractive and so impossible! Then there is the difficulty of clothes. The folds and creases are constantly changing and they have to be drawn and painted between rests, to be painted at all. How foolish not to allow the camera to give us a record, at least for what cannot be drawn except in a great hurry and unsatisfactorily!

"Having a good model for two or three hours, the painter will be able to try a number and variety of attitudes or poses. He can look at each pose from different points of view. He can make changes in the lighting, trying the pose in a widely diffused light, in a less diffused light, in a somewhat concentrated light, in a very much concentrated

light, in strong light, or in feeble light. By using a mirror and looking at the model in it, he is able to get another and different range of effects. He may use the mirror as a reflector of the subject or as a reflector of light, to diminish the depth of his shadows or to eliminate them altogether. He is able by using opposite lights, whether of windows or of mirrors, to get endless interesting effects of cross-lighting. He is never obliged to take the light from the window, where it is. By means of a mirror he can get his window where he wants it; and the light may then be modified, indefinitely, by means of shutters and white curtains more or less transparent. Studying the model in this way in different attitudes, in different effects of light, and taking photographs of the effects which he considers particularly significant or beautiful, the painter makes his camera a means of recording and developing a range of ideas which would be impossible if he had to stop to draw every effect that interested him.

"The camera is not only a means of record and comparison, but a means of expression which the painter cannot afford to disregard. The painter should make it his business to take photographs of all the subjects that interest him and as many of each subject as possible. He should try particularly to get into his photographs the facts which connect with his ideas, the ideas which he is going to express in his pictures. He must illustrate in the photographs he takes his interests and his ideas so far as he can do it, and he will find that he can do it to a surprising extent, without drawing or painting at all. He has in the photograph he takes his choice of subject, his choice of the moment when the subject is not interesting or significant, when the composition is the finest, the effect of light most beautiful, when the expression of the head or the body is just what he wanted, looked for and at last secured. Then in printing and cutting his photograph the painter may change the composition and create a relation of tones, measures and shapes which will express fairly well, perhaps, his idea of order and beauty in Design. There is an art in photography which the painter who has definite interests and understands design is particularly well prepared to practice. We should not hesitate in preferring the photographs which some people take to the pictures of painters who paint

without discrimination and without judgment and in ignorance of the art which they practice.

"It is not proposed, of course, that the painter should give up the practice of drawing and painting from Nature and turn to photography. On the contrary, he should draw and paint from Nature constantly, but when he draws and paints from Nature he is expected to do so, not without art, but with art. The painters who, following the practice of the schools, produce indiscriminate and artless imitations of objects, people and things, find in the camera a very formidable rival. The camera has driven these painters to the last trench. They still hold that color is something which is impossible to the camera. We often wish that it were impossible to painting, it is so bad when imitated and not created. The school-bred painters simply loathe the photograph and despise any painter who admits that he ever uses it. Many of them use it, nevertheless, but they are inclined to use it on the sly, making no acknowledgment of indebtedness. When we have made up our minds to give up our artless imitation of objects and begin to practice painting as an art of Design, as a Fine Art, the camera will no longer appear as a rival, to be suppressed, but as an indispensable aid and means of study. We shall go to our photographs as we go to our dictionaries, encyclopedias and other books of reference to make sure of certain facts which we want for the development and expression of our ideas. That we should hesitate to use photographs in this way, as books of reference, is absurd. The time will come, I am sure, when every painter will have a collection of photographs to refer to just as every writer has a library. We are not expected to copy the photographs and offer the copies to the public any more than we are expected to offer the public what we find in our books. The information we get, whether from books or from photographs, must be brought into the form of an idea and expressed in that form, always. When the portrait painter tells us that he is being cut out of his business by the photographer, that if the artist is to survive the photographer must be suppressed, we must urge the portrait painter to give up the competition. When it comes to statistical imitation, the camera beats the painter every time."

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Pyro Stains on Hands

Now that so many are going back to straight pyro as a developer, our readers may be interested in a plan a recent caller outlined as followed with perfect success—one that he ran across in one of the annuals some years ago. All that is required is a gentle stream running from the tap while developing and a small dish containing a two per cent solution of hydrochloric acid. The fingers are never allowed to go into the developer while dry, always being dampened or made wet under the tap, and another rinse given as they are removed. As the putting of the hands in hypo is a signal for another wetting, followed by a dip in the weak acid solution. Of course, he does not do any excessive amount of developing as would a steady dark-room man, and any cut or abrasion on the hands might suffer a little even from the very weak acid solution, but his hands were certainly entirely free from any signs of stains the morning he called after having developed nearly two dozen plates separately the night before.

Foggy Looking Carbon Prints

An Oregon correspondent sends us some samples of his carbon work, asking us if we could explain the foggy effects they present. As the negatives are good, brilliant ones, the only reason for the degraded high-lights is too much exposure of the tissue to white light after it has been sensitized and before being developed. If one will but bear in mind the effect of the "continuating action" that characterizes carbon tissue, this explanation does not seem so far wrong as it may at first appear to our correspondent. If two or three days are allowed to elapse between the submitting of the sensitized tissue to the unsafe light and the developing of the image, the well known continuating action of light on the tissue will result in an intensification of the effect that degrades the lights quite decidedly; when, had develop-

ment followed at once, no ill effect would have been apparent. This continuating action is stronger in damp weather, and, as the prints in question were made last winter, our belief that our correspondent has been careless in the matter of handling the paper is strengthened. One might use a certain light during the dry summer months without experiencing any trouble, but working in the same way during the damp winter months of Oregon find this trouble quite marked. What should be done, particularly if some time is allowed to elapse between sensitizing and developing, is to treat the carbon tissue as though it had almost the same degree of sensitiveness as bromide paper.

Flashlight "Stare"

There is an amateur up in Oregon who is doing some nice work in the way of photographing the members of his family and visiting friends by means of flashlight. That is, the work is good, were it not for the "stare" that he almost invariably gets, as he complains in his letter that comes with some samples of his work. This fault is due mainly to his plan of turning out the usual lights just before making the flash. He should leave them all burning as their light is not strong enough to register any movement the subject might make between the time of opening and closing the shutter.

Right Timing of Prints

There is not enough attention given to the proper exposure of our developing paper. The reason lies, perhaps, in the similarity between the emulsion and that of the dry plate, the latter having, in addition to quite a degree of latitude, not the same importance as to its appearance. We are not working for pretty negatives and, therefore, lose sight of the fact that while within a wide latitude as to appearances negatives will give good prints, even with the greater latitude of the emulsion, negatives having the

quality demanded of the print are secured only from proper exposure and right development. The emulsion on our developing paper contains a certain amount of chloride, and for that reason the best prints are secured only when exposure is about correct. Ask any old lantern slide worker and he will explain the importance of correct exposure in making good slides, and these are certainly more in the nature of prints than are ordinary negatives. Try a very simple experiment some time. Make a print with an exposure that is just right, make one by doubling the time and fixing the print before development is fully complete, and then make a third with the correct exposure cut only about one-quarter of the time. Compare the resultant prints. Then try to sepia tone the three. I think that the one trying this will be convinced that attention should be given to the matter of correctly timing the print.

Better Landscapes

I have a Washington correspondent who was getting very much dissatisfied with his work. Undertiming, or, rather, a dread of overtiming, combined with a fear that, were the light at all from the front, fogging would result, seemed to be his particular trouble. As he was using film I could not recommend a slow plate in order to bring exposures more under control, so I asked him to make up his regular formula with the alkali cut down almost one-half, say, with only three-fifths of the amount called for, and then expose for that developer one that would easily allow him to double his exposures, if not multiply them by four. I suggested that as he was in the habit of working with the sun well behind, he had little or no shadow in his pictures. That being the case, let the most non-actinic colors, the greens and yellows of his landscapes, the parts that came black in his prints, be considered as shadows, and the oft-repeated advice to expose for the shadows be carefully followed. This he could safely do with the new developer, and then when any particular negative failed to come up with desired detail in his "shadows" he need only cut it out of the strip and give it a finishing treatment in his full strength or ordinary developer. I have just received a number of fine prints from

the gentleman and he writes that the plan works beautifully. The long exposures that the removal of his fear has made possible brings out the different shades between different foliage in a manner that suggests orthochromatic plates and a color filter instead of ordinary film, which later, by the way, is, in some makes, quite orthochromatic in its quality.

True, the above is the recording of an everyday incident in our work, but there is a lesson therein, just the same. The ordinary plate or film is sensitive to blue compared to red and yellow as is too, let us say, a page of printed paper as compared to the surface of ordinary dark clothing, and that makes our comparison between lights and shadows quite a practical one. If we give long enough exposures to get detail in these non-actinic colors, the actinic ones will take care of themselves, and a good negative result—providing too much alkali is not used. We must get this idea out of our heads that the developing formulas recommended by the manufacturers are "normal" ones, particularly when their authors do not claim them to be such. Normal suggests that variations can be made in opposite directions, but, while we can always cut down the alkali in one of these formulas and yet produce the finest kind of negatives with sufficient exposure, increasing the alkali is practically sure to result in chemical fog if the emulsion is a fast one and the increase amounts to anything sufficient to alter results. If the ordinary worker will get a tripod, then go out and give one-tenth second where he would otherwise have given one-fiftieth, and give one-quarter second where one twenty-fifth is his usual allowance, and then develop in a developer in which the alkali has been reduced one-fourth or more, he will produce a better quality of negatives and always have at his disposal the power of compensating for under-exposure by resorting to the developer having the full amount of alkali. In other words, the worker will then be using a really "normal" developer, one that will give him control over his results, because it permits of variation in two directions to cope with either over or under exposure when these happen, as well as to control the amount of contrast secured even when the exposure has been absolutely correct.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Southern California Camera Club

The Southern California Camera Club of Los Angeles opened its First Annual Exhibition on Monday, June fifth, in their new quarters in the Lyceum Theatre Building. The exhibition remained open until June eleventh, the evening of June eighth being devoted to autochromes. There were shown one hundred and seventy-two pictures, hung on the new grey walls, comprising the finest exhibition of this kind ever held in the southern city.

The first, second and third awards in the several classes were as follows:—Non-members class: "The Guard of the Divide," by L. J. Young; "Portrait," by Rae Davis, and "Landscape," by V. W. Baker. Members novice class: "The Breaker," by Ethel G. Sloan; "Echo Park," by J. Trimmer, and "Valley Road," by J. Trimmer. Advanced members class: "Homeward," by Gertrude M. Dodds; "Mountain Mist," by Frank Shirley, and "An Impression of Broadway," by Hal G. Hall. In addition, honorable mentions were awarded: "Portrait," by Rae Davis; "A Spanish Lady," "The Little Immigrant" and "Evening," by Gertrude M.

Dodds; "The Mischiefs," by F. C. Elliott; "In the Garden of Pasha" and "Signor Corsi," by Dr. F. L. Neubauer; "Across the Moor," by Frank Shirley; "Reveries" and "Payette Lake," by Mabel A. Stewart. The complimentary exhibits included the salon prints of Edward Henry Weston of Tropico, and an exhibit by The Hoover Art Company of Hollywood, while the salon prints of Harry J. Doerr and Fred R. Archer added to the high standard of the exhibition.

Camera Club of Detroit

Thursday evening, May twenty-fifth, the Camera Club of Detroit held an opening at its new club rooms on the fifth floor of the Kresge Building, that city. The exhibition of members' work, supplemented by a collection of pictorial photography kindly loaned by *Photo-Era* of Boston, that graced the walls, added materially to the attractiveness of the rooms for the members and their guests, and it has been announced that this will be the first of a series of exhibitions and entertainments of a photographic character that the club will hold in the future.

OUR BOOK SHELVES

"A Treatise on the Air Brush"

The above is the title of a handsome cloth bound, beautifully illustrated book by Samuel W. Frazer, and we believe it is the only one yet published devoted exclusively to air brush work. The contents take the form of progressive lessons, which embody a mass of valuable information, together with new wrinkles and ideas that have been evolved by the work of an expert in the use of the air brush. In addition to this series of fully illustrated graded lessons, instructions are given in finishing portraits in sepia, lamp

black and water colors, landscape coloring, mixing colors and tints, solvents for preparing prints for coloring, troubles, their causes and remedies, what not to do, and a description of the general construction and various types of air brushes, and other matter. The price of the book is one dollar and fifty cents, and it can be obtained through the local firms of Hirsch & Kaiser, and Marsh & Company, as well as Robey-French Company, Boston, and Sweet, Wallach & Company, Chicago, and other leading dealers.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Prizes for I. P. A. Members

The Photographic Section of the Hawaii County Fair invites members of the I. P. A. to submit specimens of their photographic work for the exhibition to be held in Hilo, Hawaii, September twenty-second and twenty-third, 1916. For the best collection of ten or more prints by an I. P. A. member, a prize of ten dollars is offered, and appropriate medals and ribbons will be awarded to the second and third best collections. The prints offered may be of any subject, size and on any kind of paper, and they may be either contact or enlargement. Photographs submitted must be mounted on suitable mounts or they can be either framed or passe partout. It is desirable that intending exhibitors communicate with C. S. Carlsmith, Hilo, Hawaii, T. H., at an early date. All exhibits must be sent to the same address, by mail or Wells Fargo Express, to arrive in Hilo not later than September eighteenth. The Executive Committee of the Exhibition will undertake to return all exhibits without further cost to the exhibitor.

Circulating Post Card Album

While not all of whom I wrote have responded, I have enough replies to feel safe in announcing that a new circulating post card album will be started out over its route list to the members before this reaches the readers. The album will be sent first to Mr. Clute, who has been asked to furnish brief criticisms of the pictures, as I believe the contributors will appreciate his so doing and find the album made more interesting thereby. I trust that each in turn, as the album is received, will do me the kindness of reporting its arrival and its prompt forwarding to the next number on the route list, to the end that it may not become delayed or lost. Should any member have any criticism to make, I would be pleased to have him do so, to the end that this feature of the I. P. A. may be made as interesting as pos-

sible to the members who are interested in post cards.—CHARLES M. SMYTH, Director, Post Card Division, 1160 Detroit Street, Denver, Colorado.

Officers of the I. P. A.

F. B. Hinman, President, Room 237, Union Depot, Denver, Colo.

J. H. Winchell, Chief Album Director, R. F. D. No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Call Building, San Francisco.

Charles M. Smythe, Director Post Card Division, 1160 Detroit St., Denver, Colo.

NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

James B. Warner, Director Stereoscopic Division, 413-415 Call Building, San Francisco.

NOTE.—All stereoscopic slides sent to Director for the circulating sets must be mounted, titled, and show the maker's name and I. P. A. number on the back of mount. Notify the Director how many mounts can be used, and a supply will be sent you by return mail.

George E. Moulthrop, Director Lantern Slide Division, Bristol, Conn.

Edward B. Cowles, Secretary Lantern Slide Division, 11 Oak St., Bristol, Conn.

MEXICO.

Vice-President—Jose Ramos, Zitacuaro, Michoacan, Mexico.

Album Director—J. Jesus Martinez, Ap. 5, Morelia, Mich., Mexico.

CANADA.

Album Director—R. W. Franklin, Dodsland, Sask., Canada.

STATE SECRETARIES.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

California—A. E. Davies, 894 55th St., Oakland.

Idaho—Eugene Clifford, Weippe.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Missouri—J. F. Peters, Room 210, Union Station, St. Louis.

New York—Louis R. Murray, 21 Clark St., Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, Roby.

Wisconsin—F. W. Freitag, 500 Monument Square, Racine.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

ALBUM DIRECTOR.

- Alabama—Richard Hines, Jr., Barton Academy Bldg., Mobile.
 Alaska—P. S. Hunt, Valdez.
 California—W. E. Thomson, 3211 School St., Fruitvale.
 Colorado—O. E. Aultman, 106 E. Main St., Trinidad.
 Connecticut—George E. Moulthroppe, Bristol.
 Florida—Capt. E. S. Coutant, Lock Box 73, Stuart.
 Georgia—L. O. Surlis, P. O. Box 434, Cuthbert.
 Idaho—Eugene Clifford, Welpe.
 Illinois—George A. Price, 802 West Park St., Urbana.
 Indiana—H. E. Bishop, 1706 College Ave., Indianapolis.
 Iowa—C. W. Parker, Mapleton.
 Kansas—H. E. High, Box 72, Ellsworth.
 Maryland—E. G. Hooper, 218 East 20th St., Baltimore.
 Massachusetts—John Mardon, 161 Summer St., Boston.
 Michigan—W. E. Ziegenfuss, M. D., 327 West Hancock Ave., Detroit.
 Minnesota—Leonard A. Williams, St. Cloud.
 Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.
 Missouri—Wharton Schooler, R. F. D. No. 2, Eolla.
 Nebraska—Miss Lou P. Tillotson, 822 South 38th St., Omaha.
 New Hampshire—Mrs. A. Leonora Kellogg, Box 224, Londonderry.
 New York—Charles F. Rice, P. O. Box 517, Mamaroneck.
 New Jersey—Burton H. Allbee, 103 Union St., Hackensack.
 North Dakota—Jas. A. Van Kleeck, 619 Second Ave., North, Fargo.
 Ohio—J. H. Winchell, R. F. D. No. 2, Painesville.
 Pennsylvania—L. A. Sneary, 2822 Espy Ave., Pittsburg, Pa.
 South Dakota—C. B. Bolles, L. B. 351, Aberdeen.
 Texas—J. B. Oheim, P. O. Drawer M, Henrietta.
 Utah—John C. Swenson, A. B., Provo.
 West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS

- 4217—J. C. Lay, Corbin, Ky.
 8x10, 6½x8½, also a few 7x17, various papers, of mostly commercial views around coal mines, and inside of mines; for something similar or general views. Class 1.
 4218—M. E. Upcapher, P. O. Box 5, Grovertown, Ind.
 3¼x4¼, developing papers, of landscape views; for landscapes, marines, disasters, pictures of notable events, celebrations and mountain views. Prints only. Class 1.
 4219—Floyd Sackett, Box 17, Hallstead, Pa.
 4x5 and post card size, developing paper, of view work; for fishing pictures and scenery. Class 1.
 4220—H. J. Hollowell, Box 294, Lancaster, Mo.
 5x7 and smaller, developing papers, of views, animals, and actresses; for scenery and views or anything along these lines. Class 1.
 4221—R. F. Gavin, Concord, Cal.
 2½x4¼ and 8x10 enlargements, various papers, of outdoor scenes, nature studies, waterfalls, etc., also some good Exposition pictures; for good pictures of any kind. Only good prints sent or received. Class 1.
 4222—C. F. Ekstrom, Box 15, Worland, Wyo.
 5x7, 4x6 and 3¼x5½, developing paper, of mountain views, home subjects and agricultural views; for water scenes, and agricultural subjects, also home views. Class 1.
 4223—Mrs. Aquila Leaf, 255 East Main St., Alliance, Ohio.
 3¼x5½, various papers, of landscapes and animals; for views, flowers and animals. Class 1.
 4224—Dr. A. M. Parker, Box 355, Santa Maria, Cal. Class 2.

- 4225—Paul Derthick, Stanton, Ky.
 Class 3.

RENEWALS

- 1771—Burton H. Allbee, 724 East 22nd St., Paterson, N. J.
 Lantern slides, unmounted, any subject but mountain scenery and historic points preferred. Class 1.
 2618-X—George H. Webb, 1341 5th Ave., New Kensington, Pa.
 Class 2.
 3908—S. J. Anderson, Box 32, Bellaire, Ohio.
 Any size up to 5x7, various papers, of figure studies, posed in the nude, semi-nude and draped, San Francisco Fair views, Niagara Falls, lake views, Cuba views, bathing girls, southern views and many others of interest; as I have first-class subjects, I want the same in return, all pictures must be clear and sharp. Class 1.
 3930—Hugh L. Mangum, Box 223, E. Radford, Va.
 3¼x5½ and 5x7, developing papers, of mountains and rivers, and a few nudes; for good scenery and nudes. Class 1.
 4065—A. E. Ferte, P. O. Box 528, London, Can.
 3¼x4¼, developing papers, of general and draped and undraped figures; for the same. Class 1.
 4098—Chester W. Whittemore, Box 574, Lompoc, Cal.
 3¼x4¼ and 3¼x5½, various developing papers, of outdoor scenes and pictures of San Francisco Exposition; for anything of interest; eastern exchanges especially invited. Class 1.

CHANGES OF ADDRESS

- 1622—C. F. Fisher, Sheridan, Wyo.
 (Was Tabor, Iowa)
 3909—R. W. Franklin, Dodsland, Sask., Can.
 (Was Druid, Sask., Can.)
 4195—Oscar Hund, Marine City, Mich.
 (Was Saltsburg, Pa.)
 4202—R. H. Henry, Wellington, Wash.
 (Was Merritt, Wash.)
 4204—Claude Vedder, Butte, Mont.
 (Was Anaconda, Mont.)

WITHDRAWAL

- 2533-X—Gilmer Winston, Care Union & Planters Bank & Trust Co., Memphis, Tenn.
 For lack of time.

Illinois College of Photography

Miss Mabel Bickle, of Staunton, Virginia, a former student, recently received the honor of having five of her masterpieces hung in the photographic exhibit in Cochran Hall, Washington.

Albert E. Haueter, of '13, who for some time has been in Government service in the Philippines, took a post graduate course at the college the past month. He has now accepted a position in Cincinnati.

A recent improvement, and one in which a great many enthusiasts of tennis are interested, is the building of another court on the college grounds. A tennis club has been organized and arrangements are being made to hold weekly tournaments.

Within the last two months about thirty students have finished their work. A number of them have accepted positions while others have gone into business for themselves.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

C. F. Kohler of Los Angeles, who had his arm broken cranking his machine, is now on the road to recovery.

J. E. Slocum, of the Slocum Photo Supply Company, San Diego, passed away May 6th.

Mrs. F. Miller, doing reception work at Boussum's, in Fresno, has certainly put on plenty of weight. Mrs. M. always wished for more.

L. Liss has taken charge of the photographic department of the Sun Drug Company, Los Angeles.

B. W. Crandall, of Robinson & Crandall, Palo Alto, left, with his wife, for the East, June 3rd. They expect to be away one month.

Miss Berger, of Bushnell's, San Jose, still wears that sweet smile. We wonder why.

J. F. Hartsook has just opened a new studio at Santa Cruz. It is some fine place.

Jno. T. Hall, of San Luis Obispo, spends his spare moments riding about in his Lozier.

Tony Babb is a good trader. Swapped his Ford for a Dodge.

C. W. Courtney, Los Angeles Ansco dealer, has just added a new line—Probus Products.

The studio heretofore conducted by T. Gale Robinson at San Jacinto has been purchased by F. E. Alexander.

W. E. Detrick, of Oxnard, is doing a nice business with his new framing department.

The Bowman Studio at Pasadena has been sold to Mrs. Lillian Elwiss.

A new studio has been recently fitted up by J. H. Thullen at Merced, California.

The Tognoni Studio, Goldfield, Nevada, is now conducting a branch at Tonopah.

C. L. Stubbs has located at Coalinga, California.

The Elite Studio at Santa Rosa has been purchased by O. G. Swarts, an Oakland photographer.

The New Graflex Catalogue

Just too late for attention in our last issue comes this, as usual, most handsome catalogue, covering the Graflex and Graphic lines of cameras. The advantage of the focal plane shutter over those of the usual type is explained in a most interesting series of diagrams, and, in addition to a full listing of the many effective instruments making up



these two lines of cameras, there are shown a large number of beautiful reproductions of high-speed photography that should interest and delight any user of a camera. As demonstrations of the wonderful effectiveness of cameras fitted with the Graflex focal plane shutter, these pictures are most con-

NOTES AND COMMENT

vincing. Copies of this new catalogue can be obtained from all dealers, or will be gladly sent upon request made to the Folmer & Schwing Division, Eastman Kodak Company, Rochester, New York.

An Invitation

A neat, artistic folder with the above title reaches us from our good friend, Will Rounds, "Your Photographer," 159 Merri-mack Street, Lowell, Massachusetts. In addition to ten very complimentary press notices of his work, Mr. Rounds' invitation reads as follows:

"An invitation is sincerely extended to you, members of your family, or friends, to view a complimentary first showing of my work in direct color or Autochrom photography, to be given on the afternoons of Thursday, Friday and Saturday, May twenty-fifth to twenty-seventh, inclusive, at the studio.

"This showing is the first given of my work in this city, and has been long in the planning, but circumstances have just as long prevented it until now, when, under conditions and at a time that seems appropriate, as well as propitious, it is given previous to a more public exhibition that is to follow.

"This is the first of a contemplated series of public exhibitions of camera and lens work that I shall try to make interesting; to be given at the studio; announcement of which will be made later."

The idea of mailing out invitations to an occasional exhibit at one's studio is excellent, and the brief and modest form that Mr. Rounds has adopted should be of value to others as a suggestion in that direction.

Better Pictures

Elias Goldensky, when asked what contributed most to his success as a photographer, said: "My desire to make better pictures and hanging my prints at conventions along with the big fellows." Why should not we who have that much to learn follow his example? There are many opportunities offered during the year to get our work hung alongside that of our fellow craftsmen, and one of the best is the big exhibit at Cleveland, the week of July twenty-fourth.

Are we pictorialists, are we portraitists, or are we commercial men? Whatever our specialty, let us start now to get our best work

ready. If pictorialists, let us put our titles under them and enter our prints in the interpretative class. If portraitists, let us pick out the best three we have and see what they look like on the walls with others that we know are as good or better than ours. If commercial men, we have lots to learn from the work of those in our line by making close comparisons when the prints are hung.

After it is all over and the confused impressions of a week at the National, our prints will be returned to us with a memorandum from the judges which we know is the consensus of opinion from three men who have given to us their collective judgment in the spirit and purpose to help. Is this not worth the little effort it requires to send our best to Cleveland?

The Stanleys' Permanently Located

The backgrounds furnished by Stanley Brothers are so well known for their high standard of excellence throughout the Middle West that our readers in that section will be interested in the announcement that these gentlemen have located permanently at Grand Rapids. While the large car used by them will fail to make its appearance through the territory heretofore covered, their line of artistic backgrounds can be obtained from them at Grand Rapids, Michigan.

Some New Backgrounds

There has just reached our desk a booklet showing reproductions of twelve new designs of artistic backgrounds manufactured by Rough & Caldwell, 59 East Ninth Street, New York City. These are very attractive, several of them are quite striking in character, and two or three of them are very well suited to the general work of an ordinary studio. Those contemplating the purchase of a new ground will do well to send for a copy of this booklet, which the firm will be only too glad to supply upon request.

Letol Becoming Popular

The difficulty, if not the inability, of obtaining Metol is causing the photographer to show deep interest in the claims made for Letol, a developer now being used quite extensively by many of the local professionals. Samples of their work indicate that the maker's claims that it produces the same tones as Metol are upheld. Its keeping qual-

ity, both in solution and in use, is said to be even better. The price is not too high, being seventy-five cents an ounce or ten dollars a pound. The Mission Photo Supply Company, 88 Third Street, San Francisco, is the sole United States selling agency for this developer, and the firm reports a tremendous sale among the photographers and moving picture concerns.

Two New Developing Agents

A recent letter from Charles G. Willoughby, "Willoughby and a Square Deal," Broadway and Eleventh Street, New York City, announces that he is putting two new developers on the market, namely, Anctol and Duital. These Mr. Willoughby advises are from different chemical manufacturers, the first, Anctol, being a universal developer for plates and paper at one dollar and fifty cents per ounce, and twenty dollars per pound, while the other, Duital, the chemical name of which is Para-phenol-amin-methyl-sulphate, is similar to metol in its working and sells for one dollar per ounce and fifteen dollars per pound. Mr. Willoughby advises that these prices will go no higher, and if they can later be reduced this will be done, and he will refund any remittance if these developers are not found satisfactory.

A Metol Substitute

The Berlin Aniline Works, 213-215 Water Street, New York, advise that during the progress of the European war they are unable to import "Agfa" products, and, realizing the serious handicap under which the photographic trade is thereby placed, they have induced a reliable chemist to produce a Metol substitute. This has been found very satisfactory, and while quite naturally the prices that can be made are by no means low, those finding a need for such a developer should get in touch with this firm, which has enterprise enough to supply a satisfactory substitute for a developer now practically off the market.

Another Prize For Mr. Nelson

It may interest our readers to learn that the frontispiece of our December last issue by R. C. Nelson, a flashlight picture made with a Halderson Home Portrait Flash Lamp, won the first prize, fifty dollars cash, in the professional class at the recent Photographic Dealers' Association Convention at

Cleveland. This picture was one of several used to illustrate an excellent article by Mr. Nelson, covering the use of flashlight for home portraiture, and, in connection with the excellent articles on the same subject in our more recent issues, should be of interest to practically every professional photographer in the land. The advertisement of the Halderson lamp appears regularly in our pages, and those interested should acquaint themselves with the high degree of efficiency which this class of apparatus has now reached.

"Wait-A-Minute"

Too late to permit a change in the reading notice published this month concerning this excellent little utility, we received notice from Mr. Webster stating that the "Wait-A-Minute" would in future be manufactured and distributed by Burke & James, Incorporated, 240-246 East Ontario Street, Chicago. This will insure a much wider distribution among the dealers, and, of course, make it easier for a larger number to secure one of these excellent little attachments. The advertisement appears on another page, and, as we ourselves have used one, we can assure our readers that it is both a practical and convenient little device that should be in every amateur's outfit.

\$2,600.00 Cash Prizes

The National Highways Association, with headquarters at Washington, D. C., announces a nation-wide photographic contest in the interest of the "Good Roads Everywhere" movement. By means of this photographic contest, it is proposed to gather a complete picture of the good and bad road problem as it exists in every section of the country, and this the Association will use in its effort to obtain scientific "non-pork" legislation from Congress. The photographs selected in the competition will be used to establish in Washington a national exhibit on the good roads problem designed primarily to promote a nationally conceived scheme of highways.

The cash prizes of two thousand six hundred dollars were subscribed by General Coleman du Pont, chairman of the Board of National Councillors, and Charles Henry Davis, president of the National Highways Association. The competition will be known

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as the du Pont-Davis Road Photograph Prize Contest. The first prize, to be given for the most striking, good or bad, road photograph, will be a five hundred dollar cash award. There will be five second prizes of one hundred dollars each, twenty third prizes of twenty-five dollars each, forty fourth prizes of fifteen dollars each, and one hundred fifth prizes of five dollars each, making one hundred and sixty-six chances in all for each person entering the contest. Colonel Theodore Roosevelt and the two well-known writers, Ida Tarbell and Mark Sullivan, will serve as judges.

The conditions of contest are as follows:

1. A contestant may submit any number of photographs, any one or all of which may receive a prize.

2. All photographs must be of some road within the United States.

3. Photographs receiving a prize shall thereby become the property of the National Highways Association with full legal title and copyright vested therein.

4. The full name (do not use initials) and full address of the contestants must be upon the back of each and every photograph submitted.

5. No photographs can be returned. But none will be published by the Association or allowed by them to be published by others, save such as win prizes and are purchased by agreement after the contest is over.

6. Photographs should be addressed to "Good Roads Everywhere" Photograph Contest, National Highways Association, Washington, D. C.

7. Contest closes at noon, Tuesday, November seventh, 1916. Prizes will be awarded as soon thereafter as physically possible.

There are no other conditions. There is no limitation as to the kind of photograph; size; when taken; by whom; details shown; or number submitted by any contestant, man, woman or child. No letters should or need be written by any contestant, and no correspondence will be entered into about the competition. Any one may become a competitor. It is not required that competitors be members of the Association, and no preference will be given members over non-members in awarding the prizes.

Discussing the photographic contest on Good Roads, General Du Pont, of the National Highways Association, said:

"We have inaugurated this photographic contest as a first step in this direction and we believe that with the assistance of all Americans interested in the good roads problem we can make it a very important step. An exhibit of photographs picturing the good roads problem as it exists in every section of the country will make a most graphic and forceful lesson.

"We want the subjects of the photographs in this contest to demonstrate not only how bad roads are, and how good they can be made, but also what it means to the welfare of every man, woman and child in the United States to have good roads. For instance, we all know that a country school house located in a district of good roads has a far better attendance of pupils, and for that reason can offer them better educational opportunities than a country school in a district of bad roads.

"Consequently it would be of great value in our contest to have photographs giving a picture lesson to the eyes of our law makers of what it means to children in our rural districts to have their school house located on good roads. This is only one idea that has come to me.

"Perhaps the best way to do this is through photographs contrasting good and bad road conditions. We will arrange our exhibit to do that, but in order to allow individual competitors to take advantage of some such striking contrast as may have come to their attention, the Association has not limited competitors to one photograph, or to one prize. Each competitor can send in as many photographs as he wishes, and he will get as many prizes as his work deserves.

"Photographs will be judged first upon their merit in strikingly emphasizing road conditions, good or bad, second in their pictorial interest, and third in their photographic excellence."

Some New Models

In our notice of the new Ansco catalogue last month we intended to mention the new Ansco Junior series, as well as the new Ansco V-P No. O in two styles, but failed to do so. This new series comes in $2\frac{1}{2} \times 4\frac{1}{4}$ and $3\frac{1}{4} \times 5\frac{1}{2}$, the price of the former being ten, twelve and seventeen dollars, according to the lens and shutter, while the latter ranges twelve, fourteen, and nineteen dollars, respectively, for the three different

equipments. The usual high quality of Ansco cameras characterizes this new series, which has already proven itself such a worthy member of the Ansco line.

Prizes For Flashlight Pictures

There is a circular, although we have not seen one, telling about prizes offered for good flashlight pictures made with "Aucello" flash powder. The manufacturers evidently want some samples not made by themselves to be used for advertising purposes. While the winter months are popularly supposed to be flashlight ones, the work done during the summer evenings could be made quite interesting by reason of the wider opportunities and added convenience. How would it do to use a flash fired outside a window that opens on a porch and in that way secure an effect of moonlight with the sitter? How about a picture intended to represent a chicken thief? How little trouble would it be to fire a flash inside after setting up the camera outside the window and secure some amusing silhouettes on a curtain of semi-transparent material drawn down between! Such things are much easier to make in nice weather than in winter and the cool of the summer day is more pleasant than the midday so generally used. But about this circular; write for one, addressing Photo Chemical Company, Lincoln Park Station, Chicago, Illinois.

Removing Pyro Stains

In a letter to the editors of *The British Journal of Photography*, Ilford, Limited, advises:

It occasionally happens that a negative developed in pyro-soda developer has an unpleasant strong brown color and yellow stain when the sulphite used is impure or has become oxidized. This staining is naturally more liable to occur when a dilute tank developer is employed.

Attempts to remove this color and to convert the negative into one of good neutral tone by treatment with one or other of the various clearing baths which have from time to time been recommended are usually unavailing.

We have worked out the details of a method which, in our hands, has given good results, and have pleasure in sending you

the following particulars, which some of your readers will no doubt find of interest:

The stained negative should preferably be hardened first in a weak chrome alum solution containing one grain per ounce, unless it has been dried before the treatment is applied, as the film tends to become a little more tender in the process. It is then to be soaked for ten minutes in the following bath:

Potassium permanganate...50 grains
Common salt $\frac{1}{4}$ ounce
Acetic acid, glacial..... 1 ounce
Water to20 ounces

After a brief wash it is transferred to the following solution:

Potassium metabisulphite.. 1 ounce
Water to20 ounces

and is kept there until the bleached image is quite white everywhere to the back of the film.

The image is then redeveloped in any non-staining developer, such as amidol or hydroquinone, when a good neutral black deposit with clean shadows is produced. All the processes are performed in daylight.

The bleaching solution recommended above appears to require nearly ten minutes to complete its work on a badly stained, heavily coated, and dense negative; and as it is impossible to judge by inspection when this part of the process is complete, we recommend the adoption of this length of immersion for all cases. A too brief treatment can be recognized by the persistence of color in the bleached image after immersion in the metabisulphite solution, in which event the bleaching solution should be re-applied, but up to the present we have not met with a case requiring more than ten minutes in the latter. It is very important that the action of the bleacher should be assisted by constant rocking of the dish.

In conclusion, those who use pyro in quantity will find this bleacher, followed by the metabisulphite solution, an excellent means for removing the unsightly stains from their hands due to pyro oxidation products.

J. A. H., of Hoboken, says that he has a newly married friend, who recently gave his wife a check for her first monthly allowance.

"I think," she said coyly, "I shall have this photographed and enlarged."—*The Output*.

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CAMERA CRAFT

A Photographic Monthly

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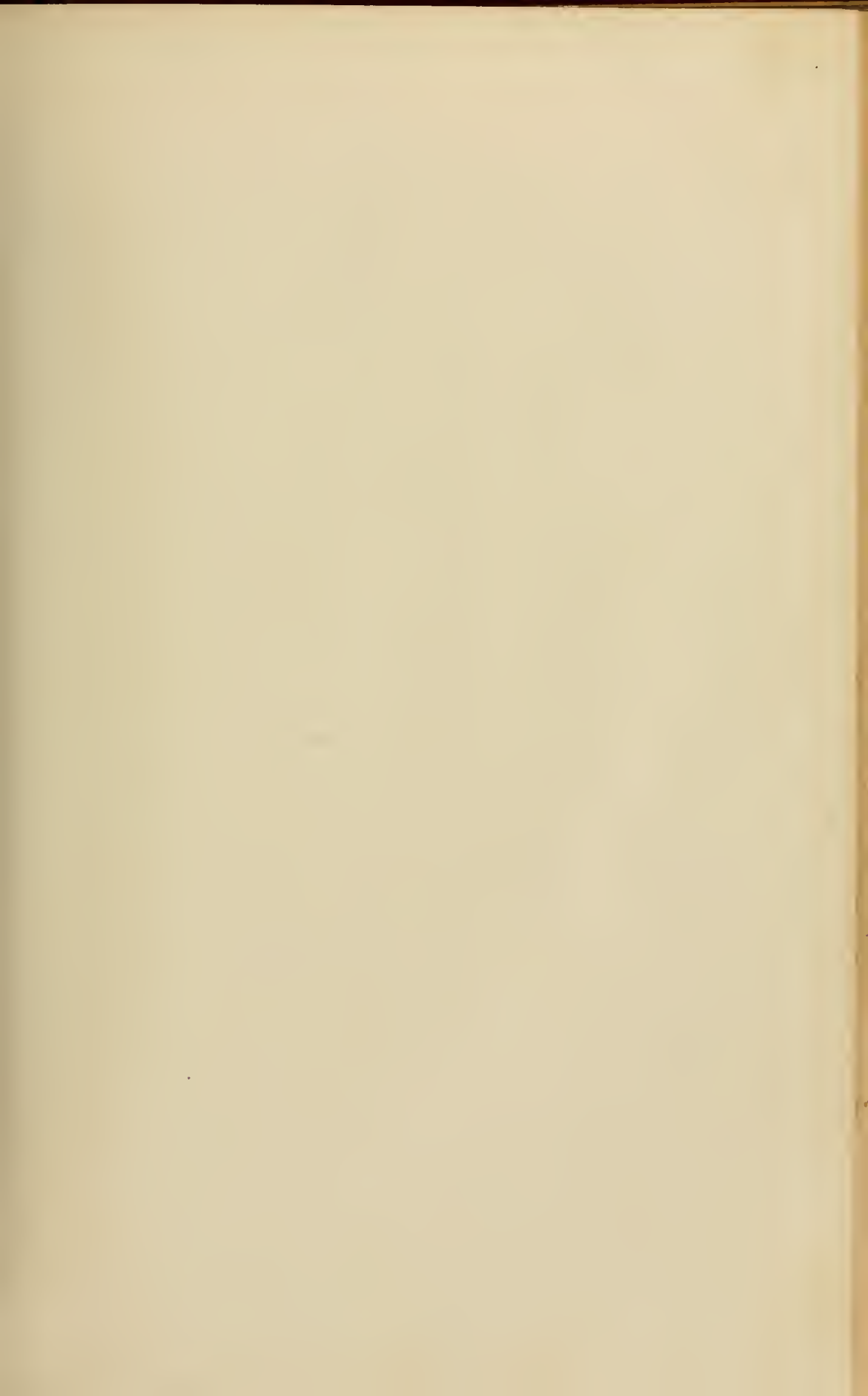
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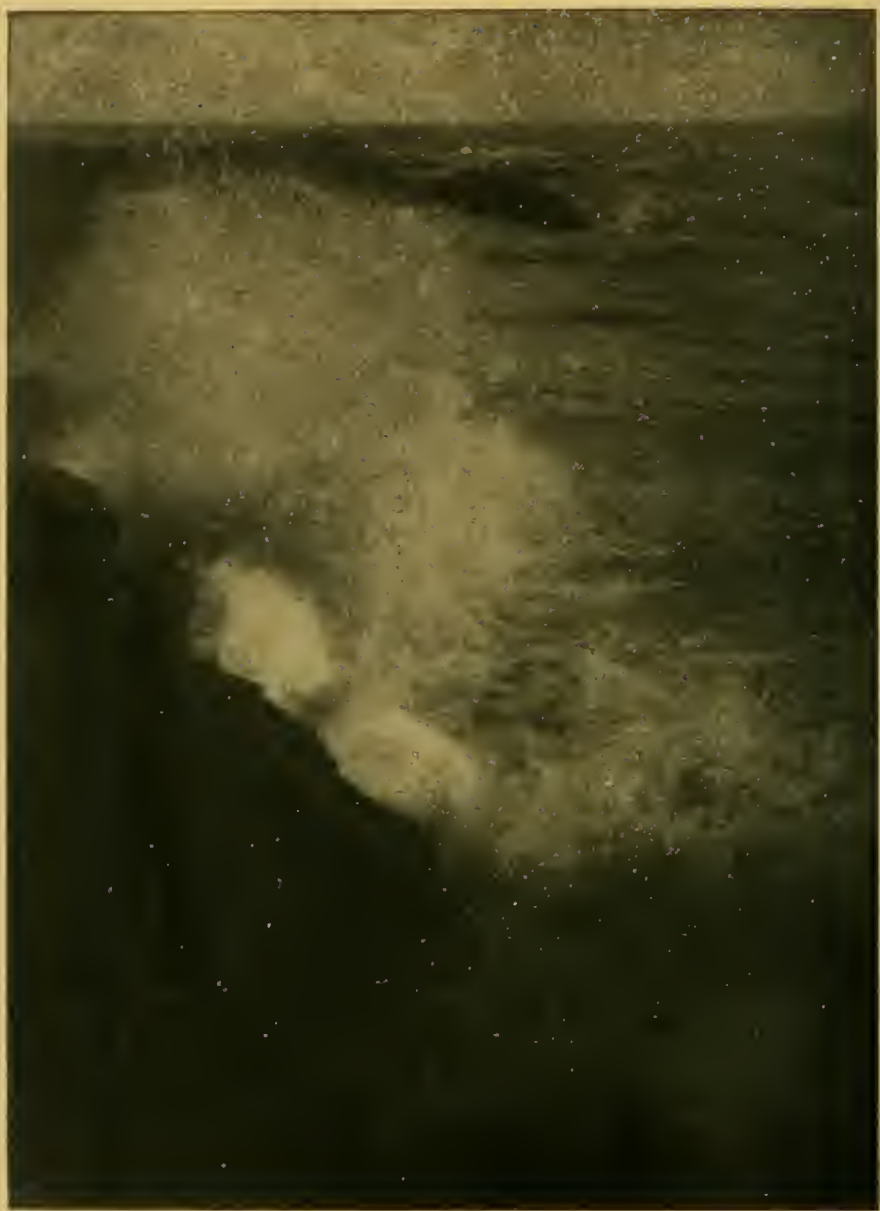
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A SONG OF THE SEA
By HAL G. HALL



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A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

AUGUST, 1916

No. 8

The Kind They Do Not Want

By Harry F. Blanchard



With Illustrations by the Author

It stands, as a matter of fact, that the average amateur photographer has no definite idea as to the particular kind of pictures the farm paper editors want for their cover illustrations. This is proven by the photographs sent in, as they are usually of a very poor class; and, on an average, not more than one out of every twenty-five of such submitted photographs can even be considered for the purpose. I am basing this statement on my own experiences in trying to secure such pictures from others. Some time ago a certain farm paper inaugurated a photographic competition that resulted in over four thousand prints being sent in by its readers. Of course, no particular kind of picture being specified, the range of subjects was such that only a few were expected to be of purely farm interest. However, just one out of the entire number was found suitable for a cover illustration.

Quite naturally, I have often been asked what kind of a picture I wanted for a farm paper cover illustration; and, as it seems practically impossible for me to explain the matter in words so that the average amateur can grasp the idea, I will, with the editor's permission, show and comment upon a few examples quite typical of those offered, but unsuited to the purpose.

In the first place, one must, in getting up a front cover illustration, make sure that it has some story telling quality. It must not only be a story telling picture, but it must, in addition to being of upright form, be very sharp and clear, have the figures or the main objects stand out from the background in good relief, rather bold, and of fair size. Taking the examples shown in the

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first illustration, while they are all taken the proper way of the plate and satisfy some of the other conditions just mentioned, still, they would not make good cover illustrations for a first class farm publication. The deer head, while quite typical of pictures frequently submitted, would not find a place on a farm paper cover once in a thousand times, simply because it has practically nothing to do with farm life, although it might be acceptable to a trapping and hunting journal. The picture of the man with the spring tooth harrow shows a farm subject and might be used on an inside page to illustrate an article on cultivation, but for a cover picture it is out of the question. The team and not the man's back, is the most interesting, and the horses should have been shown coming toward the observer at an angle of about forty-five degrees. The broiler on the scales is very poor because the bird is hunched up and has not a good pose, while the subject itself is not sufficiently interesting. The picture showing the row of Scotch Kale is a very good one for an inside illustration for some sort of an article about this particular kind of garden truck or green, as it pre-



sents a close view of the plants. As a cover illustration the subject and the background are too near alike in appearance and would seem even more so when reproduced in half-tone. By using the side swing of the camera and a large stop, the diagonal row of kale might have been kept in good focus and the background softened. Then, by getting a little closer and having the figure posed in a more obviously natural position, a satisfactory picture might have resulted. The picture of the silo could perhaps find a place on the cover of some rural publication, but as a good, story telling picture it is out of the question. In the first place the figures are too small and indistinct and they have all stopped working to look directly at the camera. Even did this not spoil it as a good cover illustration one can see that the whole effect is rather jumbled with the wagons and barn showing at the left and the old shed in the right, while the subject itself occupies only a small part of the picture space. This subject could have been taken in such a way as to make a satisfactory cover picture if the camera had been closer so that the silo, the ensilage cutter, the men and the horses nearly filled the plate. It is well to remember that in taking pictures of tall objects the front board of the camera should be raised as high as possible to avoid too much foreground while keeping the camera back perpendicular will keep such subjects from looking as if they were falling over.

THE KIND THEY DO NOT WANT



The picture of the dressed hogs is entirely unsuited, as they do not make an attractive picture. A typical farm scene, portraying a farmer and his son busy with the butchering of a hog in a neat and workmanlike manner, could be made acceptable. The picture of the cows coming out of the field is blurred, made the wrong way of the plate, and taken just a little too late for a good arrangement. The picture of the four bulls, like all these last, is taken the wrong way of the plate. It shows quite a number of the most common faults that characterize a good part of the photographs sent in to the editors. The animals are not well posed, everybody is busy watching the camera, and in addition to the arrangement being jumbled, the photograph itself is not clear enough, main objects and the background seeming to blend into each other, thereby adding to the confusion. Three or four of the characteristic figures shown, standing beside one of the animals as if discussing its merits, and taken the right way of the plate, might have made a good picture with some story telling quality. The picture of Haviland's Holsteins is a fairly clear one with the animal well posed for a catalogue or other selling picture, but the banner spoils it for a cover illustration. This picture might be doctored up and given a different appearance by the half-tone maker. He could paint out the banner, leaving an expanse of sky at the top and then, by trimming the sides, cut off the man and most of the sheds, making it into an upright picture that might possibly serve our purpose. However, the more work that has to be done on a print the more likely it is to get turned down by the editor. Enlarged, and with the ends and the empty foreground trimmed off, the central portion of the



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picture of the horses trotting might possibly find a place on a farm paper cover, as it is quite sharp and clear. The severe trimming is necessary in order to get the remaining horses large enough in proportion to the picture space. Like the last, the selected portion could be made upright by the engraver adding more sky above. The remaining three, namely, the dressed chickens, the baskets of potatoes and the man and chickens are not at all suitable, although they might serve admirably as illustrations for articles dealing with the subjects shown.

There is really not a single story telling picture in the lot, although the material in each could be used quite effectively had the photographer given the matter a little thought. Take what is perhaps the most unpromising of them all, the deer's head. Instead of arranging it on a soap box covered with a sheet, the photographer might have fixed it temporarily over a barn door or against a wall just inside, and then posed an elderly man as telling a group of youngsters just how he shot the animal years ago when deer roamed the adjacent hills. To secure the farm flavor there could be a few farm animals, implements or farm products in evidence, although they should not look as if dragged into the picture for that purpose. Again, one might, with a model having some idea of the requirements, picture a small boy as "playing hunter" and carefully "drawing a bead" on the helpless prey with his "make believe" gun, from behind a "cover" conveniently provided by a box or barrel. With his pet dog crouched at his side an added interest and effectiveness would be secured. If the photographer understands the making of good flashlight pictures, the deer's head over a fireplace, if one were available, would be a still better position and one allowing of even more effective grouping of the few figures required. The good housewife, while engaged in knitting, peeling apples, or some other simple task, might be pictured as looking up at it and telling a child at her knee its history.

However, this article is not intended to suggest pictures but to give the reader some idea as to the kind that are not acceptable as cover pictures for farm publications. If he will try and avoid sending similar work to the editors he will save time and trouble, as well as dollars, and these mean a whole lot to most of us. To repeat, in the hope of emphasizing, try to make every picture a story telling one, have the principal figures or objects of fair size, sharp and clear; and, if possible, make them upright in form. Avoid, for obvious reasons, suggesting that farm life is other than interesting and enjoyable by avoiding such subjects. Avoid stiff poses, do not let subjects look at the camera, keep the principal object clear of the background, and be sure that the subject is really a rural one. Do this and you will be bound to find a market for all the good subjects you can produce. There is endless material right at our doors and all that is required, in addition to ordinary photographic skill, is the ability to think out a few good situations and the wit to arrange the figures in such a way that the idea is carried out.

If the artist be possessed of thoughts, it should make little difference how he expresses them, so that he really does set them fully before us.—JOHN C. VAN DYKE.

Plate Mark Effects on Mounts or Prints

By Charles A. Harris



With Illustrations by the Author

As I do not recall having seen anything relating to a home-made device for producing the plate mark or countersunk effects on mounts or prints that afford such a desirable variation from the usual finish, I am sending a sketch showing the one I employ in my own work. This frame is used in connection with a hardwood impression block and a cardboard mask to be used underneath the mount or print to be countersunk. A more simple way of securing the plate-mark effect, more or less satisfactory, is to place a piece of cardboard of the desired shape and size upon the mount with several thicknesses of blotting paper underneath and subject the whole to pressure in a letter press. However, if one desires to secure a more pronounced effect, or if certain grades of tough mounting stock are to be used, the following procedure will be found to not only cover the requirements more fully and satisfactorily, but permit one to produce several different effects.

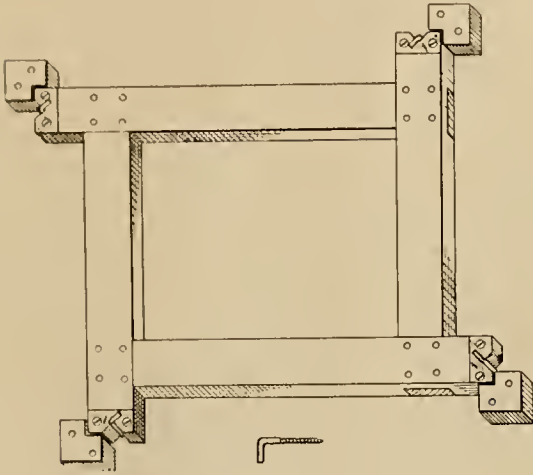
As in the case of the domestic cook book, suppose we begin by enumerating and describing the ingredients. First: A perfectly flat board about one and one-quarter inches thick and about the size of a bread board, for the foundation. Two boards, each five-eighths inch thick, may be nailed together with the grain crosswise, to give the desired thickness and also minimize the danger of warping.

Second: A block of fine-grained hardwood, two inches thick, and of a length and width to accommodate the impression desired. As with the other, two pieces, each one inch thick, can be screwed or nailed together, if necessary. Assuming that we are considering a 5x7 print, the block should measure 6x8 inches, which will leave a half-inch margin all around. The size of this block



TWO EXAMPLES OF PLATE SUNK MOUNTS

can, of course, be varied, depending upon the size of the print and width of border desired. The surface of this block, the one used for making the counter-sunk impression, must obviously be a true rectangle and perfectly plane, and care should be used to give it sharp, straight edges, free from nicks or defects; and, during use, this condition should be preserved. If desired, the corners of this block, and also those of the cut-out, may be slightly rounded; the effect is pleasing. Cut a groove on two opposite sides of the block, near the top, for a hand hold. If the block is a large one, a piece of wood nailed to its upper surface will serve the same purpose.



Third: Four strips of three-quarter-inch wood, three inches wide and about eighteen inches long. With these is formed the frame shown in the sketch; so constructed as to snugly fit the impression block, permitting of no lateral motion. The corners are made flush by cutting away one-half of each strip where they come together. A notch is cut in each of the four projecting ends, as shown, for the better accommodation of the angle screws used to clamp the frame down. A piece of

sheet brass across each of these ends will prevent abrasion of the wood by these screws. The length of these ends should be such as to accommodate any size of mount, but for utility they should be as short as permissible. The four triangular corner blocks are guides nailed to the foundation board and act as guides to insure correct register, while leaving the frame free to be removed for adjustment of the mount.

Fourth: Provide, if not at hand, several sheets of good quality, plain mounting board of two different weights, the heavier about one-sixteenth inch thick and the other somewhat less. For experimental purposes I have employed the cardboard of boxes such as the dealers use for containers in sending out pies and cakes, securing the desired thickness by pasting two or more together. However, a good, hard texture cardboard gives better results. The mask is made by placing the impression block in the center of the card and marking around it with a fine-pointed pencil and then, with a sharp knife, cutting out the center by following on this line. So doing should produce a mask with an opening into which the block just comfortably fits. This is the procedure for a thin mask to be used in operating upon thin mount or paper print or mounting paper. Heavier or very rough mounting stock will require a thicker mask and possibly a little more play between the sides of the block and the inner edges of the mask. Experiment until the adjustment is right.

To assemble the machine: First, tack one or two sheets of plain cardboard, the size of the largest mount to be handled, to the foundation board. Next,

PLATE MARK EFFECTS ON MOUNTS OR PRINTS



WHERE THE MOONBEAMS POINT THE WAY



WHERE THE ROADWAY SKIRTS THE SEA

place thereon the mask, and if this last is a little longer, one way, than the cardboard underneath, it can, when made in register with the block, be tacked directly upon the foundation board. The mount is then placed in position. As a guide in centering the mount, the mask should have marked off, on a line extending outward from the center of each side, inches, halves and quarters, these divisions numbered from the opening outward. The frame then takes its fixed position on the mount, as regulated by the four corner blocks, and is firmly clamped down. With the mask in perfect register and tacked in place, all is ready for the go-ahead bell. To secure the necessary pressure, use a strong piece of wood, several feet in length, as a lever. A block of wood nailed to the wall serves as a fulcrum for one end, or that end can be permanently attached to the workbench with a strong strap hinge, permitting the lever to be turned up out of the way when not in use. To test for proper working, use some sheets of heavy brown wrapping paper. If the finished work shows a tendency to wrinkle at the corners, and with most material it will, dampen the back of the mount or print with a wad of cotton moistened in a mixture of equal parts of water and alcohol.

It will be seen that all this is simply employing the principle of the matrix and permits of other effects being easily produced by the ingenious. For example, a second or impressed border can be made to surround the central portion, both at one operation. A bevel effect is obtained as follows: Make a second impression block, not necessarily of hardwood, the same dimensions as the first. Then make a mask with an opening one-half inch narrower and one-half inch less in length than the impression surface of the block. Otherwise stated, cut the mask opening of such a size that the block will measure one-quarter inch larger on each of the four sides. Take the piece of cardboard cut from the center of the mask and trim about one-eighth inch off two sides; then tack it in the center of the new block. The one-quarter inch margin of the block all around the sides of the tacked-on cut-out should be slightly beveled to prevent marks where not wanted. This should produce the effect required. As will be observed, the block with its inner cardboard face, when making the impression, brings a pressure to bear on the upper and outer edge of the bevel, which is thus more clearly defined. This block, on account of its cardboard surface, will not continue to give a clean-cut impression to the same extent as the first one described.

It is easy to see that one may add to the variety of effects secured by utilizing the same general method, namely, a design or mould as represented by the cardboard mask, in connection with a block having its surface so prepared as to match the portions of mask that have been cut out.

To be honest, to be kind; to earn a little and spend a little less: to make the whole family happier for his presence; to renounce, when that shall be necessary, and not to be embittered; to keep a few friends, but these without capitulation; above all, on the same grim condition, to keep friends with himself—here is a task for all that man has of fortitude and delicacy.—ROBERT LOUIS STEVENSON.



D. W. Griffith, the Screen's Master Producer (left), and His Camera-Man, George W. Bitzer (center), in Action

Daylight Motion Picture Work

By Frank B. Howe



Illustrated by the Author and Leading Studios

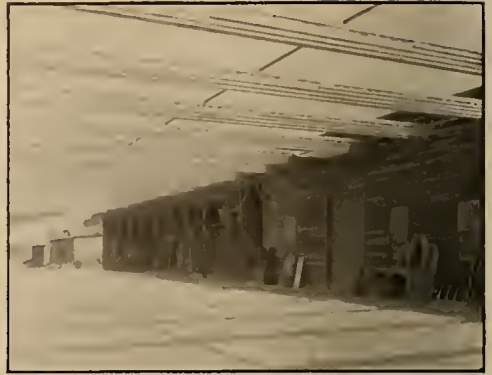
The work of making motion pictures, using daylight as the illuminant, may be divided into three classes. To the first belongs that done on the stage at the studio and comprising all indoor scenes or those supposed to depict some interior such as a room of a house or the like. The second includes what is known as location work; that is, scenes created by taking the company to some suitable, previously located natural setting, and making what is wanted by using the exteriors of real houses, everyday street scenes and other outdoor settings such as the locality affords. The third class involves the use of large exterior settings, generally erected at the studio, representing castles, street scenes, and the like, of another period or different location. The Lasky Company's street scene in the Bowery, reproduced herewith, is an example.

As the reader can easily realize, it is practically impossible to use real rooms in real houses and similar interiors for the production of motion picture scenes, through the difficulty of securing sufficient illumination therein, even were it possible to find exactly the required setting, and further, because of the difficulty that would be experienced in securing the use of such interiors even if they were found and the lighting requirements met. It therefore becomes necessary to erect the "sets" and assemble the furnishing of the required rooms and interiors. These are erected on a large floor or stage, above which is suspended, at a height of perhaps thirty feet, a canopy of cloth frames or diffusers, to soften

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JOKER COMEDY COMPANY STAGE



THE RANCH STAGE, UNIVERSAL CITY

Photographs by courtesy of Universal Film Manufacturing Company

the rays of the sun and admit, as nearly as possible, a perfect light for photography. This arrangement of screens is used in practically the same way as are the curtains over the skylights in studio portraiture. The cloth-covered frames are so arranged that they can be shifted at will, thereby permitting perfect control of the amount of light admitted to the scene below. Upon the stage are erected the sets, or scenery representing the desired interior. Sets for interior scenes are erected, ceilingless and with but three walls, the camera being on the fourth or open side. This permits the proper lighting for the picture to come in unobstructed except by the diffusers above. In these sets are placed the furniture and other properties necessary for the particular scene being "filmed." In the properties employed white is used as little as possible in order to avoid the effect of halation and assure good detail by substituting a certain buff or light yellow tint which photographs white and at the same time shows good detail in such articles as tablecloths, curtains, and the like, the use of this color being extended even to the clothing and costumes of the actors as much as possible.

When all is ready with the sets in position and the props in place, the company appears and makes preparations for the scene. The camera-man places the camera at the proper place and focuses while the director explains to the players the action of the scene. The camera-man lays off the camera or side lines, generally imaginary, but sometimes drawn with chalk, radiating from the camera, outside of which the players must not go except as they pass out of the picture. While this is being done, the players rehearse the scene until it is done to the satisfaction of the director. When the scene is ready to be photographed, the camera-man writes the number, as it appears in the scenario, in chalk, on a piece of black cardboard, and photographs this, making a few feet of film to immediately precede the scene, so that each particular scene can be identified when they are cut apart. He also makes a cut in the edge of the film before the scene is taken so that it may be cut apart and developed separately to guard against variance in exposure. This done, the director gives the order for action to start, calls for "camera" and the scene is photographed. If the action throughout is to the satisfaction of the director, the scene is done, but if something is not exactly right or not to his liking, it must be repeated and a "retake"

DAYLIGHT MOTION PICTURE WORK



D. W. GRIFFITH AT WORK

By FINE ARTS STUDIO

is made, until the scene is played successfully. The director is the master mind behind the production. Mr. D. W. Griffith, now the head of the Fine Arts Film Company, is shown in action in the heading of this article. He is recognized as the screen's master producer, and it is to him that we are indebted for "The Birth of a Nation" and other like plays. He is also responsible for the



TAKING A SCENE FOR "MOTHER OF SEVEN"—FINE ARTS STUDIO

invention and introduction of many of the effects now commonly used, including the "close up," the "cut-back," and the "fade-out."

Should there be required a "vision" or some similar effect, recourse is had to double exposure, the first being on the scene in the usual manner, after which the film is turned back the noted number of feet and the "vision" photographed against a black background, the result showing the well-known effect that is somewhat mystifying to the uninitiated. Again, should one actor be playing two different parts and in one or more scenes it be necessary for him to appear as both characters, half the lens is covered up and one side of the scene taken, the "footage" or length of film used being noted at the various places where the action changes. The camera-man then turns back the film, changes the cover over the lens, the actor assumes his second character, moves over to the opposite side of the set and the other half of the scene is taken. As may be imagined, it is extremely difficult to have the actions of two characters come at the proper time, as for example, where the two characters carry on a conversation or perform similar related actions. Success in this rendition of one actor appearing as two different characters in the same scene is only achieved by the careful notation of just where each action occurs; that is, just how many feet of film are out, so that the footage used in making the second exposure may be watched and the actions kept in unison.

One particular scene being finished, any others requiring the same set are then taken, regardless of the order in the scenario, as the various scenes are afterwards cut apart and spliced together in their proper order. A set once arranged is immediately used for the necessary number of scenes, and then "struck" or taken down to make room for others. In this way the last scene of a picture is frequently taken before the first has been made and a murdered man frequently expires in more or less agony two or three weeks before the firing of the shot that results so fatally.

After the scene is taken, an ordinary view camera is brought forth and what are called "stills" are made, the players holding some selected tense or thrilling situations while the exposure is made. These are usually on 8x10 plates and the prints are furnished the theaters for lobby display and used by the producer for trade magazine advertising and the like.

Many of the studios are of glass construction, or rather are large stages roofed over with glass, thus permitting the making of scenes in rainy weather when an outdoor stage could not be used. However, working in such a studio is practically the same as on the outdoor stage. Where exterior settings, such as street scenes and the entrances to houses, office buildings, and the like, are required and exactness as to details is not demanded, real scenes can often be located and used. When the director prepares for a given production, he sends his assistant or the "location" man to find places or locations suitable for as many exterior scenes as possible for that particular scenario, and the location man arranges for their use so that there will be no delay when the company appears on the ground to make the different scenes. At the appointed time, in their make-up and costumes, the company take an automobile to the location, the camera is set up, rehearsals are held and the work proceeds as on the stage.

DAYLIGHT MOTION PICTURE WORK



BOWERY STREET SET USED IN LASKY'S PRODUCTION OF "KINDLING"

RED CROSS BAZAAR SETTING FOR LASKY'S PRODUCTION OF "THE CHEAT"

Photographs by courtesy of Jesse L. Lasky, Feature Play Company

No overhead diffusers being possible, in scenes enacted fairly close to the camera and in which the harsh contrast of direct sunlight would be too apparent, a reflector is used. This is merely a framework of white cloth placed, when possible, so that it will throw the light upward from the front or side onto the scene, thereby neutralizing to some extent the harsh contrast. The actual making of the scene is the same as on the stage.

In cases where the proper exterior cannot be found where the company is located, such as castles, palaces, Western street scenes, and the like, or in cases where there are so many and varied scenes to be taken that success would be problematical with the reality, it is necessary that the required set be built. A good example of the latter is the Bowery scene from Lasky's "Kindling," shown herewith. This set, built at the Lasky Studio, has every detail and shows the expense to which this and other leading companies frequently go to secure correct settings and enhance the realism of their productions.

Truly some wonderful things have been done in this construction line, as witness the walls in Griffith's forthcoming "The Mother and the Law," Lasky's innumerable special sets, the Universal's walls of Lucknow Castle, and other elaborate sets from various studios. On the larger ones the use of diffusers is impossible and the taking of the scenes is much the same as in location work.



FINE ARTS FILM COMPANY'S STAFF OF STILL PHOTOGRAPHERS

VIEW OF ONE OF THE FINE ARTS FILM COMPANY'S STAGES

Photographs by courtesy of Fine Arts Film Company

Sometimes high platforms are built for the camera-man in order to get sufficient elevation for the camera to picture the desired scene properly. "Stills" are of course made of all scenes of enough importance to make them of any value, no matter where the action takes place. This covers the general methods of making motion picture by daylight and my next article will have to do with the making of scenes by electric light, a method employed to a greater extent each year.



My Album and Film File

By C. R. Lowe



It all came about through my wife and myself beginning to make up our Christmas presents in June. And, by the way, that is a good time to begin, for in our case it was time for them to be sent out but shortly after they were finished. The baby's grandpa says he would not take twenty-five dollars for what we thought would be considered but a little remembrance. Such a stack of unsorted and unclassified negatives as we had to work from! Probably Mr. Reader has seen something of the like, some time, of course never having had one of his own. The rather haphazard combinations in the little albums were fitting examples of the worth of the film filing system. Why do I not change it? Probably because it is now a closed incident.

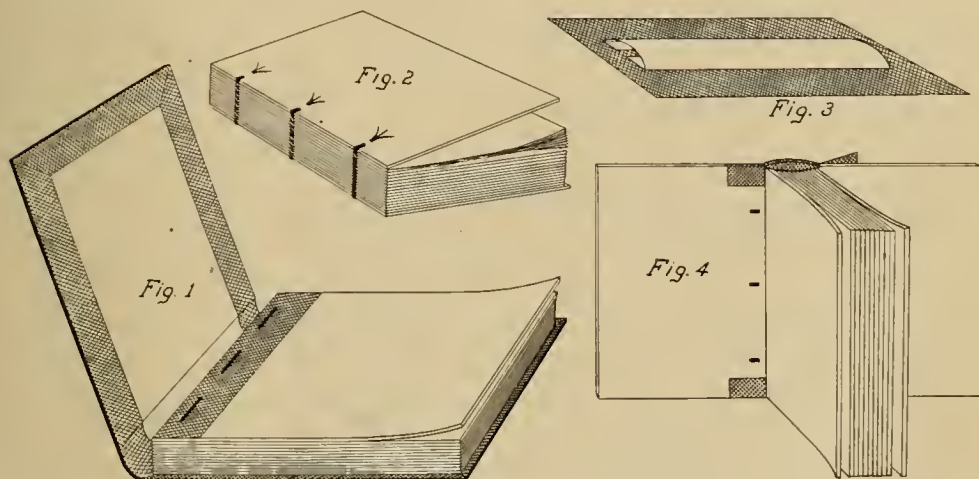
It was on this wise. I conceived of an album different from any I had ever seen or heard of; and worked out, it is admired by all who have seen it. Not all its contents are pictures, for I have had my troubles, too. The pictures were home pictures made for home folks, and we put in every single picture of that wriggling youngster, even though there is a streak of pyro stain impersonating a dirty face, or a great spot in the middle of the negative that did not get developed because the film was not wound tight enough in the tank. That baby would be a baby but once, and incidentally just a few other things would happen but once, fit subjects besides that firstborn.

The album idea is worth giving away. I was using a $2\frac{1}{2} \times 4\frac{1}{4}$ folding pocket kodak and two of its pictures could be printed on a 5×7 sheet of paper very nicely, with a five-eighths inch margin on three sides and a wider one on the fourth, the left side, or the top of the paper. Instead of selecting the films with regard to their relation to each other, I assembled them in pairs according to their quality, so that the two prints could be made at the same time. To expose first one and then the other did not occur to my ingenious mind until we were pretty nearly through. There were several of these albums to be made; and as we went along, we made all we thought might be needed. Then, if we later had some new pictures to go in, we made the new pages as we were doing other printing from the same negatives, it being but little extra trouble.

Later these pages were sorted into lots for albums. I had the printer cut some eggshell paper 5×7 and put three of these on the top of the album pages

MY ALBUM AND FILM FILE

and as many on the bottom. I had some binder's cloth, which I cut into 2x5 strips, putting one of these under and one over the bunch of leaves, keeping them at the back of the album where the printer next fastened both pages and cloth strips together, using three wire staples. Lastly the printer trimmed the books all around and cut me some cover pieces of binder's board one-quarter inch wider than the book and long enough to reach from the staples to the front of the book. Taking my binder's cloth and cutting a piece 7x16, I measured around the back of the book from staple head on one side to staple clench on the other, added one-quarter inch, and marked a strip that width across the center of the cloth. Covering the back of the cloth with good paste, I laid the cover boards one on each side, against the lines, and folded the edges of the cloth over to the inside. I next fitted the album into this cover, the back coming



against the strip of exposed cloth between the two boards. Opening the top cover as the book lay that side up on the table, I pasted the 2x5 strip of cloth to the eggshell paper, Figure 1, then covered the whole page, both paper and cloth, except that part of the cloth strips back of the staples, with paste and allowed the cover board to fall into place. I next turned the book over and repeated the process. To avoid wrinkles in the eggshell lining paper, the covers were kept slightly open for a little while, then closed and placed under a weight to dry.

These albums of mine contained from twelve to thirty-six pages, two prints to the page. To me, their superiority lies in this: The prints are not pasted in, scrapbook fashion, but they are like the pictures in any other book, directly on the page. There is no chance for the prints to become unmounted, the edges of the book are close so that no dust can find its way in, and it is compact. My own book has an occasional page carrying four prints and several pages not of my own making.

What to do with my films so as to have them in some order and shape so that I could get at particular ones without hunting through the pile, was the next question. Of course, I knew there were containers offered and that I could buy one of these film albums for a dollar. U-hu, and thereby enrich the supply

CAMERA CRAFT

dealer, although I think I do enough of that as it is. But I do not care for that; I like to make my own things and work out my own ideas. It is a downright pleasure to do so; and then, too, it relaxes my mind from its regular work so that I can keep young and grow fat, as I am doing.

This is what I did. I got some $3\frac{3}{4} \times 6\frac{1}{2}$ envelopes and sawed three equally spaced notches, three-sixteenths of an inch deep, in the bottom edge of the bunch. Then I placed a broom-straw, the same length as the envelope, on the inside of each against these saw cuts. Next I took three pieces of tow string, frayed their ends and rolled to a point with paste on my fingers. Two pieces of cardboard were cut $1 \times 6\frac{3}{4}$ for backs, and with an awl these were perforated with three holes, one-quarter inch from the sides and corresponding in spacing to the notches in the envelopes. One-quarter inch in from each of these I made another hole that enables the end of the strings to pass back on the inside of the cover boards, see Figure 2.

Next I threaded the strings through the notches in the envelopes, behind the broom-straws, and then through two pieces of writing paper cut $4 \times 6\frac{1}{2}$ one-quarter inch from one of their edges corresponding to the notches, one of these being threaded on each side of the bunch of envelopes. Lastly I threaded the ends of the strings through the boards, beginning from what is to be the outside of the cover, drawing them as tight as possible, then put some paste on the strings and pounded them flat with a hammer over the face of a flatiron, when the book began to assume shape. The quarter-inch flap of writing paper was pasted to the back of the envelopes, and, taking a $5\frac{1}{2} \times 7\frac{1}{2}$ piece of binder's cloth, a doubled strip of heavy paper was folded, as shown in Figure 3, and pasted lengthwise down its middle ready for the whole surface to receive a coat of paste.

This done, the back of the "book" was placed down on the strip of paper, the boards laid on the edges of the cloth, the latter rubbed into contact and its ends folded over and down on the inside of the boards. By slightly bending back the corners of the boards, the cloth can be slipped behind the envelopes, as shown in Figure 4, without much difficulty. Cut two $3 \times 7\frac{1}{2}$ pieces of tough paper like the CAMERA CRAFT wrappers and paste them on the outer exposed part of the boards, letting them lap over and cover the edges of the cloth, fold their edges to the inside of the boards, and then paste the writing paper fly-leaf to the inside of each cover.

Each of these envelopes holds ten films. The broom-straw in the back of each separates them at the binding so that the book does not bulge when filled with negatives. The pictures in my print album are all consecutively numbered, and the films, numbered to correspond, are filed in the same order. The titles are indexed on a couple of fly-leaves; or extra leaves might be inserted for that purpose. The films may be located by referring to either the index in the print album or the index in the film book. I write the title or subjects of each of the ten films on the front of each containing envelope. This film book is very satisfactory to me and costs but a trifle; in fact, I think I could earn a fair wage making them at a dollar apiece. Best of all, I have the satisfaction of having made it.

How To Make Lantern Slides

By Wallace S. Allen



With Illustrations by the Author

In the preparation of this modest monograph, it shall be the writer's endeavor to record simply those most salient deductions which can be drawn from his own experience as a lantern slide worker. They are submitted for the consideration of the thoughtful novice, who, with hopeful anticipation, looks forward to the monthly appearance of *CAMERA CRAFT* for help and advice.

Good technique can only be attained through the study and intelligent application of certain elementary and underlying principles, combined with a knowledge of the limitations imposed by equipment and sensitive plates. Obviously, except in skilled hands, a lantern slide is merely a reversed replica of the negative from which it was made, one that almost automatically acquires the latter's characteristics. To this sometimes fatal facility the beginner may attribute his failures, for with what seems vindictive fidelity, the slide refuses to discriminate between the virtues and defects of the negative. To the latter, therefore, it is clearly evident, the worker's skill should be devoted, with added assurance that the traditional ounce of precaution, when introduced at this stage, will be well worth a pound of cure in final operations.

A common cause of ill success is under-exposure in making the original negative; and this, to some extent, may be ascribed to the too common practice of making short, instantaneous exposures. The trouble may be minimized by the use of an exposure meter or the adoption of one of the numerous exposure



A DENVER SUNSET—Hammer Ortho Non-Halation plate, three times Cooke Iso screen, stop f-22, one-half second exposure. Hammer's pyro-metol developer used in tray.

systems, any of which are invaluable to accurate work. Correct exposure upon a properly lighted subject, when combined with either time and temperature or the factorial system of development, leaves but little necessity for the exercise of exceptional skill; in fact, leaves little opportunity for future difficulties to appear.

Definition, detail and contrast are indispensable qualities required in the negative intended for slide making. Critical definition demands careful focusing; and this last, when done on a ground glass, is made easier and more certain by the little magnifier known as a "linen tester" and sold for a nominal sum. Stopping down to small apertures, f-16 or f-22, when the subject permits, improves definition with ordinary lenses; and, to the betterment of the results, renders time exposures and the use of a tripod imperative. This good practice further results in increased depth of field, rendering focus less uncertain to the roll-film user, minimizing the danger of blurred foregrounds or other near objects, which are an abomination and unpardonable defects in lantern slides.

Detail, generally, may be said to result from full exposure, as it is usually deficient in under-exposed negatives, though it is susceptible to the same influences which affect contrast. Any rational method of development that gives sufficient density and contrast should yield an abundance of printable detail in a fully exposed negative, where the contrast of the subject does not exceed the latitude of the plate. Sunsets, firesides and night scenes, for example, are in this exceptionally contrasty class.

Contrast, to which quality the slide will owe much of its crispness and "snap," is due to a combination of factors, each of which, to a variable extent, may be used in modification of the others, thus affording a valuable means of control. Contrasty lighting, abnormal contrast in the subject, under-exposure, the use of color-sensitive plates with suitable filters, and concentrated or very cold developing solutions, all tend to give contrast. Opposite conditions cause flatness or a lack of contrast. As illustrations, landscapes are best made when the sun is shining and fairly low, as snappy detail and contrast will result, while the abnormal contrast presented by a group of white statuary amidst its usual surroundings should be reduced by making the exposure in a very soft and diffused light. Orthochromatic plates, such as the Hammer Orthochromatic Non-Halation, the Cramer Isochromatic and the Wratten & Wainwright Panchromatic, used in conjunction with proper screens, are a practical necessity in the rendering of clouds, sunsets and other highly colored subjects in monotone, though their use is advisable at all times. The manufacturers of these plates furnish most interesting and instructive little booklets, descriptive of their use.

Last, but not least, the strength and temperature of the developer, and the period of time in which the negative is subjected to its action, may be so altered as to greatly modify the influence of preceding factors. Negatives which give brilliant prints on papers like Professional Cyko will produce slides of most desirable quality, although, if for any reason expedient, both density and contrast may be somewhat increased to compensate for the transparency of the slide and the absorption of light by the screen.

HOW TO MAKE LANTERN SLIDES



THE SKY AT EVENING—About twenty minutes after sundown. Cramer Instantaneous Iso plate, Autochrome filter, stop f-16, two seconds exposure. Hammer's pyro-metol developer used in tray.



ARCHER LAKE, DENVER—COPYRIGHTED 1914
Wratten & Wainwright Panchromatic plate, three times screen, stop f-22, one-half second exposure, Eastman's three and one-half minutes developer used in tank.

By W. S. ALLEN

Assuming that we now have a finished negative at hand, the two usual methods of transferring the image to the slide may be given consideration. One may copy same size, enlarge or reduce the image of the original negative by means of an ordinary camera, provided it has bellows extension of at least double the focal length of the lens; or one can use one of the special fixed-focus copying cameras which are expressly designed for the purpose. The chief value of the first method lies in the fact that it enables users of cameras which are smaller or larger than the $3\frac{1}{4}\times 4\frac{1}{4}$, either to enlarge or reduce the image of the original negative and so make it fit the largest or $2\frac{3}{4}\times 3$ opening of a standard lantern slide mat. These last, the full size mats, have well-rounded corners that cover what would otherwise be cut off by the four and one-half inch circle of the standard condenser used in the lantern. The fixed-focus camera is a practical and inexpensive device that is very convenient for the worker who intends to make slides from large negatives of but one size.

The writer, having occasion, at rare intervals, to make slides from both vest pocket and 5×7 negatives, employs apparatus that, while somewhat of a makeshift character, gives good results. A 5×7 Century camera fitted with a seven-inch Protar lens and having twenty-two inch bellows draw, forms the main part of the equipment. When used for making slides from small negatives, camera and stereopticon are placed on a table facing each other and with their lenses in line. The projection lens is then removed, the small negative placed in the slide carrier, centered on the condenser, and the light turned on. The surface of the condenser not occupied by the negative should be covered by an opaque cardboard frame fitted into the slide carrier. A kit holding the slide plate is used in the 5×7 plate holder; and, after focusing and stopping well down, the exposure is made and the slide developed as usual. Readers attempting to enlarge from film negatives in this way are cautioned to first mount the film between two clean pieces of glass in order to protect it from the heat of the condensers.

Where there is a lack of artificial illumination of sufficient area to properly illuminate large negatives, slides can be made by reduction, using the same camera and daylight. Discarding the stereopticon used in the other plan, a hole, the size of the negative, is cut in the bottom of an ordinary box of suitable size and the negative fitted therein. The camera is then placed in front of the open side, so that the negative is centered with the camera lens, and a large focusing cloth placed over the intervening space between the camera front and the open top of the box as the latter lies on its side. So arranged, all light reaching the lens must come through the negative. Extraneous light simply fogs the slide and degrades the image. A piece of dull finished white cardboard, well lighted from a window, is placed at an angle of about forty-five degrees, a short distance, say a foot or more, upright on the table in front of the negative, to make the illumination more even. The other method of making slides, and the one usually practiced, seems much easier. It requires the predetermination of one or two factors, that is, the size plate to be used and the focal length of lens, which, when once decided upon, are settled permanently.

HOW TO MAKE LANTERN SLIDES

The writer's favorite field equipment is a $3\frac{1}{4}\times 4\frac{1}{4}$ camera of the landscape type, fitted with a five-inch anastigmat lens. It may be here remarked, in passing, that while a five-inch lens does not give good perspective in landscape work on this size of plate used for contact prints, this defect is not noticeable when its work is projected, many times enlarged, upon the screen. Distortion resulting when the lens is used for other than landscape work is caused by working too close to the subject, and may be avoided by making a smaller image. It has the advantage of covering a comparatively wide angle of view, and this can be further increased by the use of an auxiliary portrait or wide-angle lens.



BERKELEY LAKE, DENVER—Hammer Ortho Non-Halation plate, three times Cooke Iso screen, stop f-22, one-half second exposure. Hammer's pyro-metol developer used in tray.

A penciled outline of the largest size mat opening is drawn on the ground glass, and when focusing, this serves to show exactly not only the limitations of the mat, but the general arrangement of the subject as it will appear when projected. The space within this outline is divided into nine smaller spaces by drawing two vertical and two horizontal lines equidistant across it, such division aiding greatly in arranging the composition. It may be well to mention that the worker who desires to excel as a projectionist should work with the result upon the screen given chief consideration. There are some subjects within the range and control of the slide worker that can be projected with good results, but which, however, cannot be successfully reproduced by his fellow worker, the print maker.

Printing of the slide by contact is best done in a heavy professional frame in order that contact may be as close as possible and thereby preserve the detail and definition of the negative. The back of the frame should be covered with a pad of black felt to reduce to the minimum the halation due to reflected light

when a white pad is used. Authorities differ as to methods of exposing the slide in contact printing. Some advocate exposing at a fixed distance from a light of a definite intensity, varying the time to meet the requirements of different negatives. Others believe in keeping the time constant and varying the distance between the light and the printing frame. In his own case the writer has, as a principal dark-room illuminant, in the center of the room and about a foot from the ceiling, a two hundred and fifty candle nitrogen lamp with a sixteen-inch reflector. Exposures are made by placing the printing frame face up on the floor directly under the light, which is then switched on by means of a double knife switch conveniently located on the wall. Lack of space precludes a more detailed discussion of the factors which have been pointed out as of special interest to lantern slide workers, but they are treated, both individually and exhaustively, in numerous manuals and books on photography, easily obtainable through one's dealer.

The number of available developing agents, each possessing individual characteristics, together with the differences of opinion regarding their relative merits, has resulted in countless formulas, all of which cause no little confusion in the mind of the novice. Ready prepared or concentrated developers, such as Eastman's pyro tank powders and Rytol or Rodinal, are advised, both for convenience in use and certainty of results. The last two mentioned, when obtainable, may be used for any developing purpose, and, in the writer's opinion, give exceptionally fine results in making slides. To those who prefer to make up their own developers, the two-solution metol-pyro formula for negatives, found on page thirty-five of "Hammer's Little Book," can be warmly recommended. It has most excellent keeping qualities: and, used in tank or tray, is very satisfactory for not only Hammer plates, but for other makes upon which it has been tried. Use a factor of from twelve to fourteen when developing by the factorial system. The hydroquinone lantern-slide developer, which is printed on page forty-two of "Cramer's Manual," is a good and economical developer for slides. All developers should be made up with pure water, and when instructions are followed explicitly, will usually keep almost indefinitely in stock form, particularly if kept in full and tightly stoppered brown bottles or otherwise protected from the action of light. An acid fixing bath should be used for the negative: and, when used for the slide, renders a clearing solution unnecessary. Plates should be well rinsed before fixed.

Over-confidence in the dark-room lamp is the unsuspected cause of many flat or fogged negatives, and needless exposure to its rays should be avoided, its safety being merely relative. In printing slides, the latitude of the emulsion should not be carelessly abused. Make both exposure and development as nearly correct as possible, bearing in mind that cover glass will have to be bought if poor slides are not kept and cleaned for that purpose.

Extreme care is necessary to keep both negative and slide free from floating dust before exposure, when handling in the dark-room. Dust ruins many an otherwise fine slide, owing to the resultant pinholes and black spots. A broad camel's-hair brush will be found a useful dark-room accessory for slowly brush-

HOW TO MAKE LANTERN SLIDES



BUSCH GARDENS, Pasadena—Eastman Roll film, Cooke three times screen, stop f-22, one-half second exposure.

ing off plates after sharply tapping on bench or table, to dislodge any small particles of glass which may have adhered when being cut. Plates should be handled by their edges, and the fingers never allowed to touch the dry emulsion. In drying, stand the plates in a place free from dust and so that they will drain off at a corner, allowing them to remain undisturbed until dry. Fresh plates, fresh solutions, clean trays, tanks and hands are all essential to good work. The habit of leaving workroom and utensils ready for instant use is both advocated and practiced by the writer. And finally, a systematic record of the details of every operation, following exposure, kept at hand, in compact form, for ready reference, will eliminate many failures, by the facility it affords for comparison.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

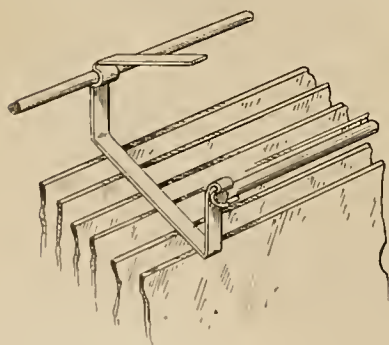
TONING BROMIDES WITH PLATINUM: An old-time formula, one recommended by E. Vogel, is as follows:

Potassium platino chloride.....	15	grains
Distilled water	32	ounces
Hydrochloric acid	2½	drams

Float the print on the above for twenty minutes, wash and remove to a fifteen per cent solution of copper chloride. If, by this operation, vigor and depth of tone are reduced, redevelop with ferrous oxalate. The method yields warm tones.—F. G. H., Delaware.

TO KEEP PRINTS FROM CURLING: Large muslin frames take up too much room for the home worker, blotter books are not quite satisfactory if one has a big batch of prints and cards to dry, and the glycerine formula mentioned by W. B. H., Minnesota, in the February *CAMERA CRAFT* may not suit all workers, so I will venture to give my own method. Take a piece of muslin five or more yards long, and lay it out on the floor if no bench is available, placing newspapers beneath. Put the prints, face down, on this, and they will dry quite satisfactorily. This plan affords all the advantages of the usual muslin-covered frames, while permitting one to roll up the cloth and put it out of sight in a drawer when not in use.—Reverend P. W. W., Wisconsin.

A TANK UTILITY: A couple of years ago I purchased a 4x5 non-reversible, brass developing tank. I soon found that the negatives developed in this tank were considerably denser at the end which was next to the bottom of the tank.



To correct this I bent a strip of brass, about one-thirty-second inch thick, three-eighths inch wide and four and one-half inches in length, into such a shape that its ends could be sprung in between the top or handle-like bars of the plate rack, the center coming down and across the plates to keep them from falling out when the rack was inverted. The sketch herewith shows its form. After the plates are placed in the rack, in the dark-room, this little utility may easily be sprung into position, the rack lowered in the tank

and operated as usual. However, after about one-half of the developing time has elapsed, the rack may be reversed in the tank, in the dark-room. Working in this way, evenly developed plates have always resulted for me.—M. R. R., Wisconsin.

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LANTERN LENS FOCAL LENGTH: To determine the focal length of a lantern lens, insert a slide with a circular mask having an opening three inches in diameter and focus it upon the screen. Then multiply the distance, in feet, between the slide and the screen, by three, and divide the result by the diameter, in feet, of the disk on the screen. The result will be the focal length, in inches, of the lens in the lantern.—A. S. O., Florida.

WATERPROOF CEMENT FOR GLASS: Dissolve fifty grains of gelatine in about an ounce of water and then add ten or more grains of acid chromate of potassium. If this solution, freshly made, is applied to the two edges of a break, the pieces bound together for a few hours, meanwhile being placed where the sunlight can act upon it, a perfect mend will result. The fracture will be hardly noticeable, and even hot water will have no effect upon the cement.—E. T. R., Washington.

SQUEEGEE PLATES: From the planing mill I purchased enough fourteen-inch lumber to cut the desired number of 14x20 pieces to accommodate my squeegee plates, specifying a white wood that they advised me had little or no tendency to warp when subjected to a wetting. I then cut a small diagonal piece from each corner, placed the plates thereon, bent down their corners and drove a small nail through them and into the sawed-off corners of the boards. The plates are a trifle heavier and they take up a little more room, but they are pleasanter to handle and work with, they are not getting bent and showing unsightly streaks on the prints, and they are going to last much longer.—D. F. G., New Hampshire.

THE POSITION OF THE HEAD: In making bust pictures, the average photographer places the head of each sitter in just about the same relative position in the picture space, with the result that there is a lack of truth that the sitter and her friends recognize but fail to locate. It all lies in this mistaken idea of getting the heads all in the same place. In my own work I always indicate on the record whether the sitter is short, medium or tall and then trim the prints accordingly. If the subject is below medium height, the head is placed just a trifle lower than usual, and if tall, just a little higher. One must be careful not to overdo the matter, as the short person will resent being made to appear so and the tall one will also be displeased, although not to the same extent.—F. G. H., Delaware.

A LOW TRIPOD: We have heard so much about the value of the direct vision view finder as compelling the use of the camera at the eye level, that we have begun to think that a high view point was the only proper thing. If one wishes to get a picture of a dog playing on the grass, or something of that kind, a picture of some individual thing, the high view point is nearly always the best. But, with a landscape made up of foreground, middle distance and distance, the low view point is the best. Look over a collection of your own prints and observe what a number show no small part of the picture space taken up with a foreground that is uninteresting or nearly so. Had the camera been placed low all this would have been changed. The expanse that adds little or nothing to

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the picture would have been foreshortened and made unobjectionable.—E. D. C., Vermont.

TREATMENT FOR BLISTERS: Some years ago we were troubled not a little with blisters on our collodion and gelatine prints. While I have not had an opportunity, rather, have had no occasion to try it on our present-day developing papers, the following was a certain remedy for blisters in the old days:

Water	3 pints
Formalin	5 ounces
Sulphite of soda.....	1 ounce

The prints were first soaked in this solution for about five minutes, then passed through several changes of water, and lastly toned and fixed in the usual manner.—W. E. R., Tennessee.

PEN AND INK SKETCHES: In addition to my own spoiled film I secure not a little of the man who does developing for the drug store on the corner. These I clean off by soaking in a hot solution of soda followed by scrubbing with a stiff brush or scraping with a knife. If any show inclination to wrinkle I go over them with a warm iron. These I lay over the selected photographs; and, with a pen and drawing ink, copy off such outline and detail as I require, perhaps leaving out some parts and adding a little here and there. From this I make a negative by contact, using a lantern slide plate, and from this last make any number of prints desired, even making enlarged sketches by the ordinary process of bromide enlarging. As I am in no way an artist with the pen or brush and the results secured by the above method are quite pleasing, I feel sure that others will have no difficulty in securing the same amount of satisfaction as I have in following this method of producing "something different" through the medium of their photographic equipment and knowledge.—F. G. H. Delaware.

INCREASING GRADATION: Recently I have been following out a suggestion given me by a chance acquaintance made on a photographic outing. The results are so gratifying that I wish to pass the hint along for the benefit of others who may like to try the same method. As I develop my plates up to about what I think is right, I do not at once place them in the fixing bath but transfer them to a tray of clear water with a cover placed over it. Here they are allowed to remain for an hour or more. As soon as I can get around to it I am going to equip myself with a new upright fixing bath, so that this can be done with more ease. This soaking seems to allow development to proceed somewhat but there is little or no increase of density. The gain all seems to be in the direction of gradation or added detail. To make sure that the benefit derived was not imaginary I took the trouble to make two exposures exactly alike, develop them in the same tray and then place one directly in the hypo while giving the other this intervening soaking. Prints from the resultant negatives convinced me that the method advised gave a quality that was not secured when working in the usual way.—T. G. B., New Mexico.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 8

Our New Department

Under the heading: "The Cameraman's Page", a new department makes its appearance in this issue. Mr. Hall, who has kindly accepted the responsibility of conducting this new department, is, we can assure our readers, capable of helping them over any of the rough places they may encounter in their motion picture work. He has had no small amount of practical experience in all branches of the work, but, he has also most successfully coached and instructed a number who are today recognized as expert cameramen. However, the department will, as Mr. Hall explains, rely to a great extent upon the co-operation of the readers who, we trust, will come forward with their own contributions in the way of helpful hints and suggestions. In addition, new goods will be given mention as they come to his notice. Being located in Los Angeles, the largest centre of motion picture activity in the country, Mr. Hall enjoys exceptional opportunities, and in these his readers will of course share to the full. Correspondence addressed to him, care of this office, will be forwarded promptly; and, as his other work permits, be given the earliest possible attention.

Our Farm Paper Cover Competition

From time to time inquiries as to where a market can be found for prints such as the writers enclosed, reach our desk. The frequency with which these come to hand lead us to believe that no small number of our readers are desirous of making the results of their photographic efforts return them some profit, but they all overlook the fact that their pictures must be more than mere examples of photography if a market is to be found. There is a demand for results produced by photography, perhaps for works that is not strictly pictorial in the full sense of the word, but it must fill the requirements of those who constitute the market. Aside from the strictly commercial field, the one in which the buyer gives the photographer a definite order to photograph certain subjects, usually a matter of personal arrangement, the market is not a very wide one. However, there is a demand for good pictures suitable for cover illustrations for farm publications, and what is more to the point, subjects in great variety are acceptable and always available. We have repeatedly offered suggestions as to the kind of work most likely to meet this demand, we have shown examples of pictures used, and we have furnished criticisms, both by the editor of a farm paper and by ourselves, of pictures sent in for our last competition. Furthermore, we have repeatedly offered to furnish individual criticism, by letter, of prints our readers might wish to submit for that purpose. We do not want our readers to compete in order to win the small prize we may offer when it is decided to close this competition, we want them to compete in order to take advantage of the opportunity we offer

to find a market for their pictures. And still further, we realize fully that only a small part of our readers are desirous of selling their work solely through a mercenary aim. As we have said before, the selling of a picture means, to the average amateur, not the addition of a certain sum to the contents of his purse, but the assurance that his work has a value, that it measures up with the production of endeavor along other lines by having a quality that makes it desirable in the eyes of others. And this last brings us directly to the point, the necessity of properly directed endeavor. The producer in other lines is governed by the requirements of his prospective customers. He does not build or create according to his own fancy, convenience, and most easily accessible material, and then expect a demand. The photographer, or at least the one that writes us as to a market for his miscellaneous prints, overlooks this obviously necessary procedure that producers along other lines so consistently follow. Why not try and gather, from what we have printed, some idea of what is wanted by the farm papers, and then let us help you to fit your production thereto.

Goods That Are Not Advertised

In a recent letter a correspondent suggests that the reason we did not approve of a certain proposed purchase was that the article in question was not advertised in our pages. He is badly mistaken. Advertising does not make any article better than a like one not advertised, either in fact or in our advice as to a purchase. Not all good photographic material is advertised, either in our pages or elsewhere, but the fact remains that it does not pay to advertise a product that does not compare favorably with those that are finding an ever increased market through a combination of merit and advertising.

The Eleventh Annual Wanamaker Exhibition

The catalogue of the Eleventh Annual Exhibition of photographs held at John Wanamaker's, Philadelphia, is quite a bulky little booklet, showing that over fourteen hundred prints were hung, the work of over three hundred individual exhibitors. The first prize of one hundred dollars went to Charles B. Keeler, Cedar Rapids, Iowa; the second of fifty dollars to Charles O. Haimovitz, Philadelphia, and the third of twenty-five dollars to Williamina Parrish, St. Louis. In addition, there were five prizes of ten dollars each and ten of five dollars, with not a few honorable mentions. Speaking of the competition, Mr. Stieglitz, one of the judges, said: "The judges had no great difficulty in selecting the prize pictures from the fourteen hundred photographs submitted to them, in spite of the fact that they were unusually strict this year, and that the standard required for acceptance for mentioning was higher. Imitation paintings and manipulated prints were unanimously condemned by the judges." We regret finding so few of our California or Pacific Coast workers represented in this exhibition, and trust that this will not be the case another year.

Not that one portion of a picture should be highly elaborated and the rest vague, but the simplification of the unimportant strengthens that which is interesting.—ANTONY GUEST.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

The Studio Vignetter

A complaint which is sometimes made in connection with the use of the studio vignetter, when a white card is used, is veil over the negative. In nine cases out of ten when this fault occurs, it will be found that it is not confined to the light vignetting card only, but is manifested also with those of medium tint, and is evidenced even with a black card, though in an opposite direction, by a thinner image of the negative. If careful observation shows that this is the case, the cause of the trouble must be looked for in the short distance between the lens and the vignetting card. With a short-focus lens this trouble will seldom occur; but with foci above ten or twelve inches the card needs to be considerably nearer the sitter, especially in the case of head and shoulder negatives, when the actual focal length, or rather extension, is somewhat increased. A serrated edge to the vignetting card will tend to aggravate the evil, and is seldom an advantage. In these circumstances a convenient method of adjusting matters satisfactorily is to get an assistant to hold a white vignetting card at a considerable distance and gradually to bring it nearer to the camera. Meanwhile the operator observes the effect upon the focusing screen, a chair placed before a rather dark background serving well enough as a subject. When the desired degree of diffusion to the edge of the card has been obtained on the ground glass, a note should be made of the position of the vignetter and this distance adopted in regular work.—*British Journal of Photography.*

Detecting Faked Photographs

Faked or otherwise deceptive photographs are frequently used for fraudulent and criminal purposes. The expert photographic witness, giving reasons for or against the admission of certain prints as evidence, has become quite a commonplace—even so long ago as the Tichborne days his importance was

acknowledged. A few brief remarks on possible methods of detecting unfairly made photographs may not be without interest.

Attempted deception takes the form of showing or suggesting what was not really there at the alleged time, or of ascertaining the absence of persons or things actually present. Retouching, combination printing, knife-work, and chemical treatment have all been dishonestly employed, as well as various devices usually classified under the name of "trick" photography. Wide-angle lenses have been pressed into service to exaggerate the size of near objects or to increase the apparent distance of those further off; contrast filters have been utilized to secure misleading records, and so on. Wide-angle effects are almost self-evident to a trained eye, and can often be demonstrated by comparing the measurements of standard objects in the picture, such as bricks, lamp-posts, etc., and thereby calculating distances. Suppression or undue emphasis by the aid of a light-filter is, however, not easy to deal with, unless the object or scene is still accessible or can be reconstructed.

A suspected print is first closely examined with a good hand lens, a reading-glass magnifying about three diameters being very suitable. For more critical inspection of small details, the Coddington lenses sold for stamp collectors are excellent; or, better still, one of the achromatic hand magnifiers employed by engravers may be used. These means alone often suffice to betray additions or deletions by pencil, brush, or knife, as well as the less perfect examples of combination printing or dodging. Contrary to what might be expected, one of the most difficult things to detect, when well done, is the introduction of a figure or object cut carefully from a print, pasted on a second print or ground, and re-photographed. Provided the lighting, depth of printing, and tonality of both figure and ground agree, and proper precautions have been taken against a "cut-out" effect,

the hand lens may fail to expose the imposition. The keener eye of the camera must then be requisitioned. A good size direct enlargement is made, which is almost certain to betray any ordinary faking, by bringing to light obvious traces of outlines, disagreements of texture, or pencil and brush marks where junctions have been concealed.

A specially made long-extension camera is necessary, taking at least 10x12 plates, with carriers for smaller sizes. The degree of enlargement may be from three to six diameters, and when the whole of a print has to be copied, it will, of course, often have to be taken in sections on different negatives. The lens should be a first-class anastigmat. If only one lens can be purchased, eight and one-half inches is perhaps the most generally useful focus. This will require an extension of five feet for enlarging up to six diameters.

Ordinary plates of fine grain, having a speed of from fifty to one hundred H. & D., are best. A magnifier should be used for focusing. Exposure and development must be for detail rather than contrast, save in some exceptional cases. The prints are best made on glossy bromide or printing-out paper, printed on the light side, and preferably squeezed, though sometimes gaslight paper will give extra detail. Examination of the negative itself ought not to be neglected, as this may show something lost in the print. Bromide enlargements are useful if nothing better is available, but cannot compete in detail with direct enlargements. When the part under suspicion is very small, photomicrography may be of service.

Faked work on negative or print is at best but a clumsy expedient, and practically sure of discovery when technical skill is at the service of justice. Far more deadly are genuine photographs in which the subject itself has been faked. Thus a few years ago a criminal just escaped arrest by producing a photograph showing him in his sitting-room at home, far away from the scene of his offense, at the time the latter was perpetrated, as proved by a tear-off date calendar on the wall and by the clock. It was not till too late, when oceans intervened and all trace was lost, that the photograph was clearly shown to have been taken before the event, the calendar being made to give false witness.

The time factor, indeed, is often of value. If a faked photograph is alleged to have been

taken at a certain hour, it may be quite practicable to disprove this by the evidence of cast shadows; and, as a recent American case has demonstrated, it is even feasible to check the actual date by similar means, under favorable circumstances.

Weather conditions are a common pitfall to the faker, and, in the absence of other indications, should always be verified. As an instance, a photograph brought forward in a building dispute showed rain on the pavement, whereas the meteorological records proved that none had fallen in the district for over a week. In another case a picture taken immediately after sunset included a new moon, which should have been full to tally with the date claimed.

Secondary objects or accessories, seemingly of no consequence, may lead to exposure. To give an example, so altering the story as to avoid any clue to persons or places, important issues depended on disproving a lady's asserted presence at a certain watering-place on a given date. An amateur snapshot, apparently genuine, showed her standing just inside the pier entrance; newspaper contents bills hung on the promenade railing served to fix the date. There could be no dispute as to likeness or identity, but the photograph was taken at a quiet time when no one else was about, and the turnstile attendant had no recollection of the lady. Her opponents, having serious reasons for doubt, submitted a copy of the print to an expert, who, after verifying the bona-fides of the photograph itself, tried to discover a slip in what may be called the "staging" of the picture. The weather conditions, however, tallied with the meteorological reports, the news bills were not chronologically wrong, nor did anything else appear dubious. Either the picture simply told the truth, or very great care had been taken over details.

As a last resort, the expert critically examined all the secondary objects. Far out at sea a fishing-smack was visible. The usual white letters and number on its dark sail identified it as belonging to a seaport eight miles away. "As far as I can see," said the expert to his clients, "your only chance is to find out the crew of this smack."

This was done. The captain and his hands all declared positively that they had not been anywhere near the place shown in the photograph on the date claimed, and it transpired

A PHOTOGRAPHIC DIGEST

that, in fact, the vessel was then laid up for repairs!

Those newspaper contents bills must either have been saved up or else specially printed. The necessary data might have been obtained from contemporary illustrations in pictorial papers, for a goodly percentage of press photographs show newsboys plying their work, and the bills would be easy to imitate. The only risk was that a passer-by might notice their out-of-dateness, which explains why a quiet time was chosen. But the clever brain of deception forgot the silent witness of the smack number.—A. Lockett in *British Journal of Photography*.

The Stanhope Lens

The Stanhope lens as described in the text-books is a solid cylinder of glass convex at both ends, while the Stanhope lens as sold in the shops is usually a solid cylinder, or sometimes a cube, of glass with one end convex and the other plane. We are not clear why the article as sold does not agree with the text-book description; but in any case the shop variety of Stanhope is an excellent magnifier with sundry good points. If the plane surface is put on an object such as a postage stamp, it will be seen that we get a strongly magnified image quite free from any trace of distortion. For this reason the Stanhope is a favorite instrument with stamp collectors, while it is apparent that the same properties give it considerable value as a focusing magnifier. Distortion is introduced if the object examined is not touching the plane surface; hence, if we put the magnifier against the smooth side of a ground-glass screen, a little distortion will be introduced, the amount depending on the thickness of the screen. The defect could be got over by reducing the depth of the magnifier by an amount equal to the screen thickness. This can readily be done; but for screen plates, with which we use the screen reversed, no alteration is required. We have a glass with a Stanhope cemented to the ground surface, which was previously ruled with pencil lines, and this forms a very useful screen and magnifier all in one. For other purposes we can grind the face of the Stanhope and mount it so that the ground face comes in the focusing plane. In this case the magnifier itself forms the focusing screen as well. It is curious that such a

useful lens should be so little used, and this reminder may perhaps induce photographers to give it a trial.—*British Journal of Photography*.

Vignette Enlargements

A somewhat similar trouble is met with in making vignetted enlargements. If a card with too small a hole is chosen, it has to be held too close to the lens—too close, that is, for the reason that in addition to the actual band of diffusion, a diffused shadow is cast over the greater part of the image except perhaps right in the center, with the result that considerable increase of exposure is required. Assuming, however, that the position of the studio vignetter proves not to be the cause of the trouble, investigation may show that another indirect effect lies at the root of the matter, namely, projection of part of the image of the strongly illuminated card onto the internal folds of the bellows, or onto a moving shutter flap from either of which light is reflected by it onto the plate. Such action is more likely to be the cause in bust portraits, and, assuming that the interior parts of the camera are properly dead-blackened, can be prevented by using a card of dark color with just a narrow band of white, say, one and one-half inches wide at the top edge, for the vignetting effect. A possible but less likely cause of fog would be a weak place in the camera front through which light is strongly reflected by a large white card placed near to it.—*British Journal of Photography*.

The Retouching Desk

One must indeed be a good retoucher to be able to turn out satisfactory work at a badly designed, uncomfortable desk, yet this is what many retouchers are trying to do with detriment to their eyesight and temper as well as to the quality of their work, which, although it may be good, would be better under more favorable conditions. No amount of polish or finish in the construction of a desk will make up for inadequate size or want of rigidity, the roughest woodwork being all that is necessary if it fits the worker. The most satisfactory arrangement we have seen was made to accommodate three retouchers. It consisted of one long sloping desk running right across a wide window, with openings for the negatives with suitable reflectors fixed behind. Above this board a

black curtain extended from the ceiling to the top of the desk totally excluding all unwanted daylight, while smaller curtains were provided to be drawn between each worker as desired. At night incandescent electric lamps were dropped behind the openings, and diffusers of glass or paper according to the fancy of each retoucher fixed behind the negatives. There was plenty of elbow room and plenty of fresh air, and it was found that a much greater quantity of work was got through than in the old-fashioned way of packing the retouchers with their portable desks into odd corners. We are sure that it pays to devote a special room to retouching, especially as the walls can be used for negative racks, or even for stocks of mounts and other material.—*British Journal of Photography*.

Printing In Sun and Shade

Johannes Gaedicke in the *Photographische Hochenblatt* describes some experiments as to the relative merits of sun and shade printing. A sensitometer scale was printed on two pieces of paper to the same mark, No. 11—one in the sun in nine seconds, the other in the shade in thirty minutes. They appeared alike. They were toned in a borax gold bath, where the shade printing toned a little faster. After fixing the latter had a slightly redder tone. The sun printing showed slightly better gradation in the deep shadows, with no trace of bronzing, which was slightly apparent in the shade printing. The general result was in favor of direct sun printing.

Opaques Blacks

There appears to be considerable scope for a microscopic mounter who can hit upon some plan which will give better results than the professionally mounted slides of diatoms and foraminifera. Many suggestions were made in the course of the discussion which followed Mr. McIntosh's paper. One was to use a very black paper employed in some of the Kodak specialties, and treat it, before the application of the object, with the minutest amount of the material known as "gloy," which practically filled up the interstices and corrugations of the paper surface. T. E. Freshwater said that Quekett used as a varnish sealing wax dissolved in alcohol, and spoke of it as affording a particularly fine surface for mounting foraminifera; apparently it had no grain whatever and was abso-

lutely opaque. Another worker, however, had found black sealing wax to be too shiny. One can never, as Chapman Jones said, obtain a black reflecting no light at all. The finest black will always scatter three or at least two per cent of the light falling upon it; the precise amount of scatter varies a little with the direction of the light, and if there is grain, with the direction of the grain.—*Amateur Photography*.

Opaques For Blocking Out

Ready-made opaques are too expensive for general use. I herewith give one or two formulas for opaques used, based on some information gathered in America. These mixtures have been found to work and keep admirably, and are to be preferred to any others that have been tried. They keep well either in liquid form or in cakes. Should it be desired to make a quantity and keep in cake form, simply mix to stiff paste, spread out in the lids off shallow tins, such as small biscuit tins, and store away to dry.

To make up a most useful opaque suitable for above use, take:

Red lead	1 part
Chrome yellow	1 part
Red ochre	1 part

All obtainable from any color merchant.

These colors being in powder form, can be mixed together dry in an old cup or basin preferably. Next add a small quantity of boiling water, sufficient to bring to a stiff paste, taking care to stir well all the time. Having done this, add a small quantity of ordinary office gum. Work this well into the solution. Providing a good quality of gum is used, there is no need to add any preservatives whatever. This mixture when used will be found to be more opaque than Indian ink.

A more dense material suitable for blocking out large portions of negatives can be made of the following:

Yellow ochre	1 part
Chrome yellow	1 part
Red ochre	1 part
Black, either ivory or vegetable.	½ part

Mix and grind well together, and when thoroughly mixed add hot water till dissolved. Follow by a generous amount of gum as previously described. If kept in a liquid state in a wide-mouth bottle, it will always be found very useful.—B. F. Welch in *British Journal of Photography*.

THE CAMERAMAN'S PAGE

Edited by Hal G. Hall, whose consideration of
new material of merit can be secured.

Introduction

This department will be conducted as an exchange of ideas pertaining to cinematography; and, to be completely successful, it must have the co-operation of cameramen. Practical time-saving "stunts", chemical "dope", methods of securing light effects, and the like, will be welcomed and credit given each contributor. In addition, consideration will be given inquiries concerning difficulties arising in motion picture work.

This department is not, in any sense, intended to encourage photographers in general to take up motion picture work. The present need is not for more cameramen. However, we believe that every good worker, now making a livelihood by motion picture photography, must have at least one "stunt" that he could pass on to the benefit of his fellows without detriment to himself. We also believe that there are few cameramen who are so good that some one, somewhere, could not help them with hints or suggestions. We believe such co-operation can be made beneficial to the profession as a whole. Do your share by sending in suggestions, queries, or complaints; bread, bouquets and brickbats all are solicited for this department.

Manufacturers of a new or special motion picture apparatus, chemicals, and supplies, are invited to submit samples and literature for consideration in this department.

Speed and Distance

There seems to be some confusion of ideas as to relationship of speed and distance. Of course, good motion picture photography does not demand that every individual exposure be free from blur or movement, as does speed work in the making of "stills". As to shutter speeds, that is "yet different again", but assuming a normal shutter opening of one hundred and twenty

degrees, or one-third, or any other particular opening, there is a speed-and-distance limit. As in most cases the turning speed is fixed within narrow limits, the thing that matters is the approximate relation of necessary distance to speed, in case the subject's speed is beyond control; or, the control of subject's speed when a certain distance between camera and subject must be maintained in order to get proper size of image.

Let us suppose a runner moves seven feet a second, moving at right angles to the axis of the lens. At approximately one hundred and twelve feet from the camera the field of view, with a two-inch lens, is about fifty-six feet, and in one second the runner moves one-eighth of the distance across the field of view. At fifty-six feet from camera the field of view is about twenty-eight feet, and on the screen the runner will move one-fourth the distance across the picture. Similarly, at twenty-eight feet from camera the runner passes across the field in one-half second, at fourteen feet entirely across field in one second, and at seven feet he requires but one-half second in which to cross picture. It is obvious,—and painfully so on the screen, that eight individual images, projected one-eighth the width of screen apart, can not show smooth and well defined action,—nor can twice that number.

From the above extreme case it will be seen that if a given speed of action at a certain distance produces a trace of perceptible blur or that jerkiness due to rapid movement, in order to avoid any increase of this defect, the action must be only half as fast at half the distance; for, with the same speed the blur and jerkiness will be twice as bad, in all probability meaning failure. In case the speed of action cannot be controlled, and we know that a certain speed can be handled without unsatisfactory blur and jerkiness at a certain distance, we know that twice the speed of action can also be handled with the same camera speed at twice

the distance, providing, of course, that the reduced size of image would not be unsatisfactory. The use of a different focal length lens is equivalent to working at a different distance, as regards size of image and rate of movement. For example: the use of a six-inch lens at a given distance is equivalent to using one of two inches focus at three times the distance, although the angle or perspective and the depth of focus is different.

At a given camera distance approximately one-half more speed of subject is permissible if the movement is at an angle of forty-five degrees than if at right angles to the axis of the lens, while double the speed may be permissible when movement is directly toward or away from camera.

While no definite rule can be formulated, and one can hardly say that such and such conditions will produce good results, or that a ten per cent variation therefrom will mean failure, it is well to bear in mind that general relationship between speed and distance. The most frequent violations of the speed limit occur in too quick entrances and exits near the camera and in moments of too rapid business by characters shown half length or close up.

Better Photography, Too

In *Hearst's* for July, Isaac F. Marcossou, writing interestingly on "Finance and the Film", analyzes the reasons that made easy money possible in the early days of the film industry, he mentions: " * * * the cost of filming was very low, * * * the price per foot was from fifty cents to one dollar, * * * big stars and big writers had not left their original fields, * * * distribution was comparatively cheap and the movie public had not been educated." Commenting on the trend of the motion picture industry, Mr. Marcossou prophesies: "But the money of the future is not to be made on the same basis as the money of the past, the percentage of profits will be narrower because the cost of production is greater, and with growing *quality*, competition, it will have a tendency to increase."

The trend toward better pictures is unabated, but elaborate sets and big names no longer hold full sway with the movie-going public. Good stories and good photography will of necessity be "among those present" in the successful films of the not-

far distant future. Not long ago thousands were spent in production for dollars spent for "scenarios", and almost anything in the way of photography would, as they expressed it, "get by". Where a maximum of twenty-five dollars a reel was recently paid for "scenarios", as high as a thousand a reel has recently been paid for a film story, while some cameramen's salaries are now higher than that of the average director of a few years ago. The time is past when cooks and elevator boys can profitably fill in spare moments by striking off a few "scenarios".

The successful film of tomorrow will not be filled with interiors, all made under the uniform flat lighting of either diffusers or arcs almost surrounding the sets. The successful cameraman of tomorrow will have a thorough knowledge of lighting and light effects. The mere crank-turner will have been relegated to "innocuous desuetude", whatever that is, along with overworked trick photography, unnecessary visions, meaningless dissolves, and the twenty-five dollar "scenario".

Think it over.

Dissolves

Under the heading "Motion Picture Photography", in the July issue of *The Camera*, Mr. Dench comments on the superiority of dissolves over "old abrupt method". While useful enough at times, the dissolve from one scene to another is often used without any occasion whatever. The dissolve is often used needlessly, merely because it is on the camera, much as are the sirens on some automobiles. Excepting occasionally in visions, cut-backs or thoughts, we see no more reason why the scenes of a film story should be run together, than the sentences and paragraphs of a magazine story should be "dissolved". When one scene, or sentence, is completed, why not "cut it" before proceeding with the next?

Masking a Lens

From the same writer we learn that a mask, or mat, should be "one by three-quarters of an inch" and attached to "the lens of the camera". Remarkable! As a matter of fact, the mat must be a considerable distance from the lens in order to produce an image. A mat of the suggested size would be satisfactory placed immediately in front of the film

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Photographing Against the Sun

The average amateur, early in his experience, had a number of films or plates spoiled because he had pointed the camera in the direction of the sun, and that of course settled the matter for him. But like a lot of other things, done in one way means disaster while rightly performed, making exposures directly towards the sun is one means of securing some very pleasing pictures. All that one needs to do is to watch for a moment when the clouds cut off the intensity of the light. Let them go out some evening or late afternoon when the sun is low enough to come within the plate along with the landscape view below, and when there are clouds in evidence, and then make a few snaps. Wait until a cloud passes over the face of the sun, and often this will not mean much waiting, and then make a quick exposure with a small stop. About a twenty-fifth of a second at $f:32$ will be a good way to experiment. If the cloud arrangement is a good one and the landscape below is harmonious and pleasing, a good picture will result. It must be remembered that the cloud effect and the streamers of light breaking through above are the main elements of the picture and therefore not much is required of the landscape itself. One will, in fact, practically be making sunset views. And this reminds me of the efforts a friend made some years ago to determine just how he could make a sunset picture look like a sunrise one. He practiced early rising for several weeks in pursuit of sunrise pictures, only to find that his results all looked about the same as the ones secured when the sun was setting. Talking it over we turned to an old issue and showed him where some writer had explained that, with considerable space above where the sun was supposed to be, the mental impression was that the orb of day was rising; while, with the sun nearer the top of the picture space and some little room below the effect was that

of the downward travel of that luminary. Measuring up some of his own pictures by this rule he found that there really was quite a little difference in the effect produced upon the mind by the different locations of the sun.

Transferring Prints To Cloth

An Illinois subscriber wants to know if there is any practical method of transferring prints to cloth. In the "*British Journal Photographic Almanac, 1912*," is given a method of transferring prints on printing-out paper to cloth and this might work with our present day developing paper if no hardener is used in the fixing bath. Our correspondent can try it and if it fails, have recourse to the paper recommended. The print is preferably made with a white margin and the cloth, which may be silk, linen or sateen, should be washed thoroughly to remove any dressing it may contain, and then dried and ironed. The cloth is then pinned by its four corners to an ironing board and ironed with a hot iron to make it perfectly dry and warm just before placing the print in position. The print, as it comes from the last wash water, is swabbed or blotted off with some old linen and then placed face down on the cloth. A roller squeegee is run over, a sheet of blotter just barely moistened with glycerine is placed on top, with a sheet of dry blotter on top of that. Then, go over the whole with a hot iron, doing this thoroughly and with some pressure, and then, without any hesitation, remove the blotters, seize the two opposite corners of the paper and peel it away from the emulsion which should have become incorporated with the fabric. I have never heard of the results of this method but it seems worthy of trial.

That "Camera Wants" Department

I wonder why the amateur readers do not use the "Camera Wants" department in this magazine oftener than they do. There must be quite a number who have graduated from

CAMERA CRAFT

the 6½x8½ or 8x10 class into the pocket camera division, and every year they keep their old camera lying on the shelf it decreases in value. An advertisement costing only fifty cents would no doubt find them a buyer in some professional who has use for a camera such as the amateur no longer requires. There is little trouble connected with making the sale, as the Express Company will undertake to deliver, allow examination, collect the money and return to the shipper. If that does not appeal and the intended buyer desires a few days' trial, and the parties concerned, being unknown to each other, do not care to take any risk, let the buyer send the amount to this office with a request that we pay it to the owner of the camera or return it to him as the camera is accepted or returned. This Camera Want department is run for the benefit of the readers, the rate is much lower than that made regular advertisers, and yet we fear but a small part of our readers appreciate the opportunity it affords them to turn unused apparatus into the wherewithal to buy something they can use very nicely.

Using the Glass Cutter

Looking over an article by Mr. Harris, one that will appear in some coming issue, one telling how to cut ovals, I find advice as to using a block as a support and guide for the knife-point. This reminds me that *Photography and Focus* of England published a good suggestion of the same kind applicable to the use of a glass cutter of the diamond kind. Instructions for using the diamond specify that it has one particular position in which it cuts best, that this position must be found and the handle so held that it is maintained throughout the cut, something that is not so easy to do, particularly if the cutter is used only occasionally or by different persons, which last the usual instructions say must not be permitted. This suggestion from our foreign contemporary is, as I remember it, that a small block of wood have a channel cut along one side, into which the steel shank of the diamond fits. This channel to be at the proper angle for the best cutting result with the particular diamond being used, and its depth to be a little less than the thickness of the shank so that the exposed side of the latter can slide along the straight edge or ruler being used as a guide. Then all one has to do is to place the cutter in

position and slide the block along, no care being necessary to "maintain the same position", the block attending to that part of the work.

Make Some Dust Scenes

And this is the time of year when the roads are somewhat dusty, at least, some of them. And how few amateurs realize just how effective they can make a certain class of pictures by the simple expedient of photographing more or less of a dust cloud in conjunction with the subject, be it some children, a small flock of sheep, a farm wagon or even an automobile, coming along a country road. One does not have to go far in order to find suitable conditions, the position of the camera is naturally such that the dust need not cause the photographer any discomfort, and the determination of the correct exposure is not the problem that it often is when mist, moonlight and other effects are being attempted. I once heard a painter bewail the difficulty of reproducing such a scene with his tools, yet the photographer, with facilities for reproducing the scene perfectly, rarely tries to do justice to such subjects. If you doubt the possibilities that are presented in this direction by the average country road, just watch for suggestions of the kind in the next few motion pictures you may be enjoying.

Shutter Jar

A recent caller gave us a description of a demonstration that had been made for his benefit by a clerk in a photographic stock house. He had purchased a lens and the question of a shutter came up. While he had a preference for a type popular some years ago, it was not a strong one and he was willing to listen to the merits of a new shutter of which he had never heard. Besides other advantages, the recommended shutter had absolutely no jar. It was set at "Time", placed on the show case and the bulb pressed. Not the least movement of the case was perceptible as it snapped open. On the other hand, the shutter he had in mind made quite a little jump under the same conditions. This settled the matter and the shutter the clerk advised was the one bought. We are mentioning this here as we believe about the same procedure was advised in some foreign journal some years ago as a method of testing shutters for possible jar.

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3958—Orrin Dudley, San Anselmo, Cal.
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CHANGES OF ADDRESS

2780—V. A. Ulrich, care B. E. Calkins Co.,
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(Was Spokane, Wash.)

4009—H. J. Gergen, Escondido, Cal.
(Was San Bernardino, Cal.)

WITHDRAWAL

4089—A. G. Paget, Honolulu, T. H.
For lack of time.

OUR BOOK SHELVES

California Camera Club

Following the regular monthly meeting of the club on the evening of June thirteenth, a set of one hundred lantern slides made up of a selection from the work of some twenty different American and Canadian camera clubs was shown. This is the set that was sent to England over two years ago for exhibition purposes under the direction of R. Child Bailey, editor of *Photography*. The following Tuesday evening, June twentieth, a demonstration on the use of Enlarging Cyko was given by Phil B. Keeler, of the Ansco Company, and on the following Tuesday evening, W. G. Masters, of the Eastman Kodak Company, gave a demonstration on the correct manipulation of Velox paper, the prints being made on an Eastman amateur printer. Sunday, June twenty-fifth, a most enjoyable and successful outing was held at Camp Taylor, an ideal location with its famous Paper Mill Creek that not only satisfies the most exacting landscape photographer, but the trout angler as well. Friday evening, June thirteenth, the regular monthly

lecture was held at Native Sons' Hall, B. R. Baumgardt, the popular lecturer, taking for his subject, Sweden and the Swedes, Their Relation to the German Empire, and showing an interesting set of slides as illustrations. June tenth there was placed on the walls of the club an exceptionally fine exhibition, composed of Ethnographic Indian Photographs, the work of Frederick Monsen, F. R. G. S., the well-known traveler and lecturer. The club's annual Yosemite outing, June tenth to eighteenth, was the most successful in its history, over four hundred members and their friends participating.

Camera Club of Detroit

At an election of officers on June nineteenth, the following were elected: Otto H. Linstead, president; Cecil H. Taylor, vice-president; Philip M. C. Armstrong, secretary-treasurer; Dr. Oscar E. Fischer and Herman Gabriel, board members at large. A program of events has been arranged, including a number of lectures, club outings and other entertainments. An open competition will be held in the fall, to be announced later.



NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

Chas. E. Shaw and family, of Berkeley, spent the month of June in Yosemite Valley.

E. J. McCulloch had a big display of pictures in his show case, of members of Berkeley Company of the National Guard soon after they were ordered out, and made the eagle scream for a while.

H. R. Brinsmead and his better half spent the second week in June in San Francisco, attending the Eastman School while here.

H. K. Zinkian has taken a soul mate—was married in June.

Frank Bassett, of Terkelson & Henry, has added a retoucher to his family—some nice little girl.

Among the prominent photographers who attended the Eastman School were: Messrs. Lee and Nunes, of Fresno; Mr. Tucker and wife, of San Jose; Mr. Powell, of Hanford; Mrs. Freeman, of Eureka; Miss Bryan, of Marysville; Mr. Salb, of Petaluma; Mr. Reithers, of Healdsburg; Mr. and Mrs. Henline and daughter, of Klamath Falls; Mr. Schneider, of Stockton; Mr. Blanert, of Marysville; Mr. Fonda, of Redwood; Mr. Heidrich, of Monterey; Mr. Nelson, of Santa Rosa; Mr. Wohlbrucht, of New York, and Miss Olga Dahl, of this city.

George A. Dolan, of Wolff & Dolan, Probus paint manufacturers, spent his vacation in the Yosemite Valley.

Mrs. Muriel Cutlibert is managing the Elite Studio in Oakland, while her husband has charge of the Elite Studio in San Francisco. Both places are doing well.

George Biddle, the Camera Doctor, recently found a bag of gold behind a radiator—one of the fourteen in the *Bulletin* Contest. (How careless!)

Mickey Lamoigne is going back to Fresno. Says his moustache grows better down there. He was with the Owl Drug Company in San Francisco and will take charge of the Fresno store when opened.

Kilborn-Pratt

The marriage of Miss Gertrude Pratt and Frank Kilborn took place Saturday, June seventeenth, at the Soldiers' Home in Marshalltown, Chaplain Pratt, the bride's father, officiating. Mr. and Mrs. Kilborn returned to Cedar Rapids and went directly to the Kilborn residence at 1634 Washington Avenue. The bride is a sister of Mrs. Burt Jackson and has been a teacher in the public schools in this city for a number of years. Mr. Kilborn is president of the Kilborn Photo Paper Company.—*Cedar Rapids Gazette*.

Mr. Lutes Is Successor

On the death of Mr. Slocum of the Slocum Photo Supply Company, 958 Fifth Street, San Diego, California, some weeks ago, Harold E. Lutes, who has been manager for a number of years, purchased his interests. Mr. Lutes will conduct the business in his own name and as he is well and favorably known to a wide circle of photographers, we feel quite sure he will make the business a rapidly growing one. He has already increased his monthly order for copies of *CAMERA CRAFT* fifty per cent over that of the old firm.

Steadman's Unit Actinometer Ready

Not a few of our readers will be pleased to learn that, after unexpected and unavoidable delays, Mr. Steadman is now supplied with a stock of his new Unit Actinometers and is filling orders as rapidly as received. We ourselves have been favored with a sample that was given immediate trial, with the result that we were more than pleased with the ease and certainty with which the correct exposure could be determined. Particularly in the case of home portraiture, where, by reason of the widely varying light conditions, the finding of the correct exposure is important, the new meter worked admirably. The direction accompanying the meter are full and complete, the list of plate and film speeds

covers over two hundred different kinds, and there are also simple little cards showing the relative exposures for different stops of the F, the U. S. and the simple three-stop system of the Brownie class of cameras, as well as one for moving picture cameras. As Mr. Steadman says: "It is a new thing to think of brightness of surfaces, expanses, etc., in simple unit numbers. It is natural to think of distance, weight, etc., in such numbers, because we have been taught from childhood to do so." With his unit method, once this measurement of brightness is grasped by the mind, the determination of correct exposure becomes as easy and accurate as the determination of the cost of a number of articles at a given price each. See the advertisement on another page or write for particulars, addressing F. M. Steadman, Box D, Concord, New Hampshire.

A New Bargain List

We have just received a copy of "Bargain List No. 20," just published by the New York Camera Exchange, 109 Fulton Street, New York. This is a very extensive catalogue of some exceptional bargains in a wide range of cameras, lenses and the like, and we would advise any of our readers interested in the securing of some excellent equipment at a moderate price, to send for a copy. In addition to practically all of the popular lines, there are listed quite a number of such lenses and cameras as the average worker does not feel justified in buying new, for the reason that their use is but occasional, and articles of this character seem to be priced particularly low, perhaps for the very reason that they are not in general demand.

A New Struss Lens

To meet the demand for an inexpensive pictorial lens suitable for use with the Graflex and other various cameras of the reflecting type, the Struss Pictorial Lens is now being made in a new and improved form of mount, one which permits of its use set in, so that it closes up in the camera; or, set out when shortness of bellows extension makes additional distance from the plate necessary, as when photographing very nearby objects.

The nine-inch focal length lens is set in one and one-half inches from the front board and requires a minimum bellows extension

of ten and one-half inches. The twelve-inch lens is set in the same distance and requires a minimum bellows extension of thirteen and one-half inches. When the bellows extensions, as given above, are the maximum, the lenses should be used in the forward position; and, when not in use, set in so as to close up the camera. With a relatively short bellows, an extension tube may be fitted to give the required distance between lens and plate.

In the tubes of two inches diameter, lenses of seven and eight inches focal lengths may be fitted to order, their speeds being f-4.3 and f-5, respectively. At full aperture these focal lengths give even more diffusion than the regular nine-inch lens, working at f-5.5. This is a very desirable quality, more definition being easily secured by stopping down until the required sharpness results. Prices and full particulars can be obtained from the manufacturer, Karl Struss, 5 West Thirty-first Street, New York.

Carl Ernst & Company's New Address

Carl Ernst & Company, the well known manufacturers of photographic mountings, advise us that hereafter their address will be 258 Broadway, New York City, instead of the old address on East Twenty-third Street. The new location affords many advantages over the old and this announcement of the change gives us an opportunity of calling attention to the excellent line of mounts and folders that this firm has so long been supplying to the discriminating ones in the photographic field.

Exposures In Enlarging

One of our correspondents recently wrote us relative to difficulties he had experienced in using a new enlarging apparatus. It is not necessary to go into the details but for the benefit of others it might be well to explain a point that is not generally understood. When using an enlarger that has a ground glass interposed between the light and the negative, reducing the size of the stop, other factors being the same, doubles the exposure just as it does in ordinary camera work. On the other hand, with an enlarger fitted with a condenser instead of a ground glass or other diffuser, the rule does not hold good. The condenser transmits the light in the form of a cone; and, with such an adjustment that the point or apex of this comes at the lens stop, cut-

NOTES AND COMMENT

ting down the stop may cut off only a very small portion of the light, perhaps none if large stops are being employed.

Dealing With Hard Negatives

A method of reducing contrast by treating a negative with bichromate of potash in hydrochloric acid and then redeveloping to the required point of fixation before the rest of the silver is reduced, meets with just criticism in *The British Journal of Photography*. I say just because I have repeatedly tried this method, tempted by its seeming simplicity and theoretical possibility, with almost uniform failure; a result which I believe is inherent in all partly completed chemical reactions in that they do not seem to occur uniformly, but start at some particular point from which they spread in an irregular fashion. *The British Journal of Photography* suggests the conversion of the silver image into an iodized image which, it states, will then print very softly.

Some five years ago, at the time that I published my paper on the modified Traube method of making lantern slides, I did quite a little experimental work along these lines, with the result that it was possible to obtain almost any degree of intensification with hardening or softening at will, by first iodizing the negative with a solution of ferricyanide of potassium and iodide of potassium, washing and then staining; if for a softer result, with methylene blue; and if for a hard image, with rosaniline. The unstained yellowish white image of potassium iodide is, in my experience, a little too diffused for practical work in the majority of cases.

A Barometric Print

A New York correspondent wishes directions for making a print, such as he remembers having seen described. Looking the matter up, I find the directions given as follows: Coat paper with a ten per cent solution of gelatine; and, when quite dry, float on a ten per cent solution of bichromate of potassium. The paper is again dried, this time in the dark, and then printed under a positive such as a transparency or lantern slide. Immersing this print, as it comes from the frame, in a ten per cent solution of cobalt chloride, the unexposed parts will take up the chemical, after which the print is washed for a few moments and again dried. A faint image will be seen and this

will change color with changes in the humidity of the atmosphere. When the weather is damp the image will be quite indistinct, but as fair, dry weather comes on the picture will turn to a quite pleasing blue.

Wanamaker's Second Popular Exhibition

John Wanamaker, Philadelphia, announces its second popular exhibition of photographs to be held in the Wanamaker Store, Philadelphia, November first to eighteenth, entries closing October twenty-first. This exhibition is for the benefit and encouragement of the novice and beginner who might hesitate to send pictures to an exhibition where only artistic merit was considered. Vacation pictures and pictures of anything interesting will be welcome and the prizes, thirteen in number, ranging from twenty-five to three dollars, will be awarded by a committee of newspaper photographers who are practical men. Very large or very small pictures are not desired, those ranging from 5x7 to 14x17 in size, being most suitable. These should not be framed but may, if desired, be covered with glass and bound at the edges. The name and address of the exhibitor, name of lens, material, and any other information of interest should be written on the back of each picture. The Camera Store, John Wanamaker, Philadelphia, will furnish labels for these details if requested. All photographs should be carefully wrapped and addressed; Camera Store, John Wanamaker, Philadelphia, and be delivered before October twenty-first with express charges, if so sent, fully paid.

Combination Printing In Carbon

It is generally considered difficult to combine a figure and background or to insert a figure in a group when printing in carbon, but a friend who is skilled in three-color carbon showed us how simple it really is if the methods of the color worker are followed. In the first place, the two prints are made, as usual, on tissue from the same band, and cut the same way of the band, either with the length or the width of the roll. The two temporary supports should both be rigid, ordinary waxed opal for the figure, and collodionized glass for the background. Each piece of exposed tissue must be soaked before mounting at exactly the same temperature for the same time, about three-quarters of a minute at sixty degrees Fahrenheit.

They are then developed and dried as usual, and the figure transferred to the ordinary double-transfer support. After cleaning off every trace of wax with benzole, the glass bearing the background is dipped into water, and then coated with a five per cent gelatine solution. The figure print, soaked, of course, until limp, is carefully laid down upon it and lightly squeegeed. The glass is then turned over, and the prints registered by sliding one on the other. When the correct position is attained, the squeegee is again gently applied, and the whole put aside to dry. The print comes off "full gloss," but if this be objected to the collodion may be cleaned off with the usual solvent.—*British Journal of Photography*.

Dr. Bigelow Elected Scout Naturalist

The Managers of the Boy Scouts of America have elected Dr. Edward F. Bigelow, of Sound Beach, Connecticut, "Scout Naturalist". He will guide the great and growing organization of boys in their nature studies, answer questions and conduct a department entitled "On Nature's Trail" in *Boys' Life*, the official monthly publication of the Boy Scouts.

This work is not entirely new but rather a development of one of the lines of interest and helpfulness that has been carried on for a long time by Dr. Bigelow through The Agassiz Association. Dr. Bigelow has for many years taken an interest in Boy Scouts. He has answered many letters, addressed them in various places and troops have been frequent visitors at Arcadia. He has also written departments of the Scout Handbook. This new development has been undertaken on an extensive scale at a remuneration hardly covering the cost of correspondence, with not much of any allowance for traveling and other expenses that will necessarily be incurred. Dr. Bigelow is accepting so large an undertaking in the belief that it will be sustained by naturalists and philanthropists, and especially by those who recognize the tremendous importance of the educational possibilities of the great Boy Scout Movement.

A New Background

Pliable Paintings is the name under which the Seavy Company, 8 South Dearborn Street, Chicago, Illinois, brings out their latest creation in backgrounds. They announce

that they have, after much study and experimenting, produced a painted background that, while retaining all the beauty of the artist's brush, is pliable. For some time past they have been receiving inquiries for a background that would stand the wear of being used for both studio and home portrait work, something other than the plain or clouded grounds offered. Experimenting along this line resulted in the developing of a process whereby any design can be produced in this pliable form. Photographers, particularly those in the smaller cities and towns, appreciate the fact that home portraiture is fast coming to that stage where the best work is demanded. They know better pictures can be secured when the subjects are posed amid the familiar surroundings of their home, where they are less self-conscious and consequently take a more natural picture. In work of this character a background of the kind described will often be found of the greatest assistance.

Illinois College of Photography

Many of the former students will regret to learn of the death of Professor W. J. Brinckley, of Milwaukee. A number of years ago Mr. Brinckley was our instructor in optics and chemistry, and of late had been connected with the Museum in Milwaukee.

Professor C. W. Fisher, principal of the colleges, has become a politician. At the spring election for members of the Board of Education of the city schools, he was elected president for the coming year. Some day he may be elected governor.

Mr. and Mrs. J. H. Scott, both former instructors at the Bissell Colleges, have, for the past few years, been making their home in Nome, Alaska. They are planning to return to the States during the summer and Mr. Scott will probably engage in business here.

As a means of advertising and boosting Peoria, Illinois, about two hundred of the business men of that place travelled by special train to a number of towns in surrounding States. The special passed through Effingham May eighteenth, and some of the motion picture class of the college made pictures of their march through the streets of the city. B. W. Post, formerly an I. C. P. student, was official photographer for the "boosters."

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A Photographic Monthly

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A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

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SAN FRANCISCO

CALIFORNIA

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No. 9

Making An Exposure-Calculator

By H. H. Ketcham



With Illustrations by the Author

My photographic timing began with using my own judgment. This method was highly satisfactory as long as an experienced friend went with me—just that long, no longer. Next I tried a mechanical exposure calculator. A year of exasperating uncertainty as to the results of exposures which could not be repeated, convinced me that my trouble was due to the calculator; it was correct at one end of the scale, but not at the other. Further search procured a meter which checked reasonably with my experience, but it was as big as a sign board and yet incomplete. I also found that the accuracy of a time-determination made by one of the various meters using sensitive paper depended upon one's ability to count time correctly and to match colors with exactness. There is some objection to using a method that demands skill and practice to such an extent that it does not permit the recording and subsequent use of experience gained.

All this set me thinking. For the same working conditions, that is, with the same plate and stop, the time of exposure depends upon the intensity, or photographic value, of the sunlight falling upon the subject. This in turn depends upon the latitude, and, if one determine the light value during the day by his watch, as is customary, this also depends upon the position in the time-belt. It is not possible for a calculator manufactured in and correct for, let us say, Key West, to be absolutely correct in, let us say, Seattle. One cannot time in Louisiana as in New York, I tried it. The least difference obtains during the middle of the day in midsummer, while the greatest difference, of course, occurs morning and afternoon in winter.

CAMERA CRAFT

The intensity of sunlight, at its source, the sun, is constant. However, by the time it reaches us, things may have happened to it. For instance, in winter it travels further than in summer before reaching us, and it travels through a greater amount of atmosphere. It gets tired, as it were, on the way, and cannot hit so hard. In the late afternoon it hits at an angle, and of course a glancing blow is not so effective as one straight from the shoulder, as at noon. Then again, it may have an argument on the way, as when it passes through a mass of clouds.

The value of the light for photographic purposes, depends upon its normal intensity as modified by the interference met with in its transmission from its source to the object illuminated or its point of use. We have seasonal differences in the light supply as well as local disturbances in its transmission. A table of so-called light values covering the seasonal conditions, used in connection with another table showing allowances to be made for local variations, should give one the total result logically.

The local variations due to haze, smoke, weather, etc., variations affecting the light in transmission, are practically constant in any locality. The values given in the "Light Transmission Table" herewith may be considered universally applicable.

LIGHT TRANSMISSION TABLE.

Giving inverse light-intensity ratios for variations in the local weather and atmospheric conditions affecting the transmission of light from the sun.

Brilliant or intense.....	1
Hazy (half shadow).....	1½
Faint shadow (barely discernible).....	2
Shade (ordinary conditions).....	4- 6
Dull	3- 4
Very dull	5- 7
Very gloomy	8-12

Fortunately, all of us do not think exactly alike; your own idea of "dull" or "very dull" may not be the same as mine. In that case, revise either your own idea or revise my table, but do not change both at the same time.

LIGHT SUPPLY TABLE.

Giving inverse light-intensity ratios for seasonal variations in the supply of sunlight.

HOUR	JUNE	JULY MAY	AUG. APR.	SEP. MCH.	OCT. FEB.	NOV. JAN.	DEC.
12 M...	1	1	1 ¹ ₁₀ ...	1½...	1½...	2 ¹ ₈ ...	2 ¹ ₄
11 A.M. 1 P.M...	1	1	1 ¹ ₁₀ ...	1¼...	1½...	2¼...	2½
10 A.M. 2 P.M...	1 ¹ ₁₀ ...	1 ¹ ₁₀ ...	1½...	1½...	1½...	2½...	3
9 A.M. 3 P.M...	1½...	1½...	1½...	1¾...	2	3...	4
8 A.M. 4 P.M...	1½...	1½...	1¾...	2¾...	4½...	8	10
7 A.M. 5 P.M...	1¾...	2	2¼...	5	10	25	
6 A.M. 6 P.M...	3¾...	4	8	18			
5 A.M. 7 P.M...	14	18					

The values in the Light Supply Table, as explained above, vary with changes in geographical position. However, the values shown will give approximate

MAKING AN EXPOSURE-CALCULATOR



A TYPICAL LANDSCAPE, ALABAMA—August, 4 p. m., clear, f-22, one-twenty-fifth second. Alabama uses Central Standard time, while it really belongs in the Eastern time belt, so that this is rightfully a 5 p. m. exposure.

results, negatives that will develop and print, wherever one be located. As arranged it is correct only for average conditions, that is, the middle latitudes and ordinary altitudes. It is intended only as a foundation upon which one may build, by small corrections, a table satisfactory to oneself. ▀

The factors used in the Stop Table are also dependent upon one's own definitions of the several subjects. Another's "open view" may not correspond with my idea of the same kind of a subject. It will be well for one to talk the matter over with some experienced friend before using any table, and particu-



"WATCHFUL WAITING," FLORIDA—April, noon, dull, f-16, one-fourth second.

CAMERA CRAFT

larly so before making any change in this table. Before making any alteration in the table given, be sure that so doing is justifiable and then see that the change is correctly made.

STOP TABLE.

Giving the stop to use with the time of exposure obtained by the use of the two light tables.

SUBJECT	RATIO	STOP
Dark objects in which detail is required....	11	....f- 9.4 or U. S. 6
Portraits—interiors, under trees.....	8	....f-11.3 or U. S. 8
Buildings	6	....f-13 or U. S. 11
Average landscapes	4	....f.16 or U. S. 16
Open landscapes and light subjects.....	3	....f-18.4 or U. S. 21
Distant landscapes—partial snow scenes....	2	....f-22.5 or U. S. 32
Near water view—seascapes and like.....	1½	....f-27.5 or U. S. 48
Snow scenes	1	....f-32 or U. S. 64
Distant sea, sky, clouds.....	½	....f-45 or U. S. 128

The maximum amount of light falls on any given outdoor subject at noon in midsummer on a clear day. This requires the minimum exposure time and is the starting point on which this system is based. Calling this minimum time "one exposure," then, when the light is half as strong, one requires twice as much time, or "two exposures." The light may be half as strong because it is noon in early November instead of noon in mid-June. The Light Supply Table covers this. The light may be half as strong because of clouds, as shown in the Light Transmission Table. Again, the light may be one-quarter as strong because it is a cloudy day in November instead of a clear day in June, making "four exposures" necessary.

The values in the Light Supply Table are ratios. To use this table, first determine the minimum time of exposure required, that is, the time given a well lighted subject at noon on a clear June day. This time is about one-fiftieth of a second for many cameras, although it may be one-twenty-fifth or one-one-hundredth second, or something else. It is not necessarily the shortest time one's shutter can give, although it may be such. One may have two cameras having different minimum exposure times owing to a difference in the lenses. Again, if plates or films of different speeds be used this minimum time is different for the two.

This minimum time determined, one has only to multiply it by the proper ratio value of the Light Supply Table. The result gives one the actual exposure time to use on a clear day, the Light Transmission Table not being required. When the sky is not clear, increase the time of exposure by multiplying the "clear" time by the proper figure as shown opposite the existing conditions in this table.

The Light Supply Table I use in my indoor work and so prefer to keep it in ratio form as shown herewith. When working in the field I prefer to do the multiplying, in my case, by one-fiftieth of a second each time, instead of doing it all at once. The reader may elect to do the same, particularly if he has two lenses of different speeds.

Directions: Select the proper figure from the Light Supply Table, multiply

MAKING AN EXPOSURE-CALCULATOR



WINTER'S LAST MANTLE, Missouri—April, very dull, 7.30 a. m., f-32, one and three-fourths seconds exposure given. Dark patches under trees are mud, not shadows.



A PLAIN SNAP, SOUTH DAKOTA—December, noon, slightly cloudy, f-8, one twenty-fifth second. The altitude and snow on ground compensated for the cloudiness

it by the minimum time of exposure for your camera, and use this result with the stop selected from the Stop Table. If the day is not clear, increase the time as shown by the Light Transmission Table, multiplying by the figure selected therefrom. If another stop is desired, change the timing accordingly. When in doubt, use the longer time or the larger stop.

I find it very convenient to carry the Stop and the Transmission Tables in the form of small cards, together with only about one-fourth of the large Supply Table. In May I carry only that part covering April, May and June values, and so on for each month. The correct time required for sunrise or sunset photographs varies greatly even in a single month.

The data given with the illustrations furnish examples of the use of the tables. Working out these data, considering them as arithmetical problems with the answers attached, will give one a clear understanding of the method. As all four of the examples shown were complicated by cloudiness, the following more simple example may give one an even clearer start. Assume that the minimum or standard exposure for one's own particular camera is, with the proper stop, one-fiftieth of a second, and the subject to be photographed is an average landscape, at 5 p.m. in July. The Light Supply Table calls for two of these standard exposures, that is, two-fiftieths of a second. An average landscape in the Stop Table calls for f-16. It is a clear day and the Light Transmission Table tells one to use the timing of the Light Supply Table without modification, that is, to multiply the two-fiftieths of a second by one,

which, of course, does not change it. The determination of the exposures for the illustrations called for a multiple greater than unity, but in the above simple case one would simply use one-twenty-fifth second with stop f-16. Were the month in the above example August instead of July, more light would be wanted on the film, and this could be secured by using one-fifth second with the same stop or by using one-twenty-fifth second and opening the diaphragm a little more.

This method is intended primarily for those who, like myself, take their camera along on a week-end trip or possibly only on their yearly vacation, workers who want results and who have not the time to acquire that perfection that comes by practice. Actinometer data cannot be set down in black and white so that it is of value to the occasional user, while the tables here given do seem to be satisfactory in that particular while still being full and exact enough to satisfy even the most advanced worker. Despite the fact that except for the tables themselves the working is a matter of memory only, I could put my kodak on a shelf for a year and then go out and secure as good results under usual conditions as I could at the present moment. With other methods I would be compelled to spoil a few exposures "rubbing off the rust" I feel quite sure.

My reasons for devising this method and compiling the requisite tables were the wish for data in a form flexible enough to permit easy correcting and so ultimate accuracy, and convenience, with a minimum amount of work. Using these simple tables I have attained the accuracy so gratifying to the photographic enthusiast; and, the convenience of a lazy man. In giving this data here I am prompted by the hope that I may help some other amateur to overcome a difficulty that is minimizing his enjoyment of photography.

Photography As An Art

In the hands of an artist, then, photography may be an art. Employed by an unimaginative mechanician it can never be a creative art, though he may endow it with fine qualities of technique that properly come under the head of craftsmanship. Executive art, if it is worth anything at all, implies a certain amount of feeling communicated from the brain to the hand, not necessarily in respect of the executant's own conception, but, as in the case of the violinist, arising from the sympathetic understanding of the creations of another. In photography we have not much to do with the art of execution as distinguished from the art of creation, for the two become merged, except perhaps in the instance of reproducing pictures, which indeed is a very important function. It is, however, useful to mark the difference in order that those who aspire to the artistic use of photography may fully understand that in their landscapes, seascapes, and portraits they have a double duty to perform. They require the power to originate and the skill to execute, so that imagination and craftsmanship together may bring about the best results by the simplest means.—ANTONY GUEST.

Photographs For Farm Paper Covers

By Harry F. Blanchard



With Illustrations by the Author

It is not an easy undertaking to make a photograph that will be satisfactory and suitable for a farm paper cover illustration. Even with the proper figures and surroundings, it takes considerable time and patience to get the subject or subjects rightly posed and in a natural position; that is, appearing as if not posed and absolutely unconscious of the camera. Every farm paper wants good, clear, story telling pictures that convey their message without the necessity of a title, if they can be possibly obtained. They want such photographs, and as I have made and found a ready sale for hundreds, I know they can get them. And, as I possess no unusual ability or enjoy no special opportunities I know others can make them.

A photograph for a cover illustration should have all the figures as large as possible without their appearing crowded in the picture space. The drawings used to illustrate stories in the magazines will give one a good idea of what is good treatment in this respect. There must be considerable more in a picture intended for cover illustration than one would naturally suppose, judging from the wealth of material and the wide scope of the available field, as one will find that it requires no little time and study to arrange a good story telling picture under the most favorable conditions. When it comes to making the exposure one must be careful to see that the subjects have a natural pose and are seemingly unconscious of the presence of the camera. When one goes out to portray a farm scene he must bear in mind that more is required for a cover illustration than the mere having of a farmer happen to be somewhere within range of the lens when the shutter was snapped. The pictures



PICTURES LIKE THESE CAN BE MADE ANYWHERE AND ARE EASILY SOLD

CAMERA CRAFT



THESE ALL FOUND A READY SALE AT GOOD PRICES

used by the publishers of farm papers all look very simple and unstudied, but they are only so in appearance. While they are not exactly artistic, as a rule, the old adage about its being art to conceal art, applies, at least to this matter of the subject appearing quite natural and entirely unconscious of the camera; despite the fact that an hour or more has been spent in securing the result. The right kind of a picture does not contain any suggestion as to the care and thought it may have cost.

It seems quite difficult for the average amateur photographer to realize that nine out of every ten pictures used for cover illustrations are taken as uprights, that is, with the shorter sides at top and bottom. I do not know of a single farm publication that wants photographs made horizontally for its covers. One should bear in mind, in attempting this line of work, that his photographs will find a much more ready sale if they be taken upright instead of the horizontal way. One should try, as our editor has suggested, to make all his farm pictures suitable for cover illustrations; and then, if not acceptable as such they may still find a place on an inside page.

The situation exists, in hundreds of instances, in which Mr. So-and-so, a

PHOTOGRAPHS FOR FARM PAPER COVERS

very good amateur photographer, would like to enter the farm periodical illustrating field, but he is at sea as to what he should photograph and where sell his pictures when they are produced. This last is the least difficult part, as I know by experience that it is quite easy to sell good photographs of farm subjects. Of course, as I have been making and selling such pictures, as a side line, for about fifteen years, I have a regular market for all I can make, but the demand for good photographs far surpasses the supply that I can produce or obtain from outside sources. The field is open to all amateur photographers with enough technical skill to produce good, clear pictures. The best way to get in touch with the buyers, as suggested by the editor, is to get copies of the various farm papers and, on turning to the editorial page one will always find the address of the publishers. Most of these papers give the editor's name, and, when this is the case, the prints can be sent to him. If one has no convenient means of getting in touch with a number of farm publications, he might apply to one of the subscription agencies for a list of the most desirable ones. I might also suggest that one send twenty-five cents to Tennant & Ward, 103 Park Avenue, New York, and order *Photo Miniature*, No. 120, entitled: "Marketing Photographs for Publication", as it gives much valuable information.



AS EASY TO SELL AS THEY ARE TO MAKE,—IF MADE RIGHT

CAMERA CRAFT

One should be sure and have all his photographs intended for farm paper cover illustrations very sharp and clear and of a size not smaller than 8x10, but if for use inside the papers, they need be only 5x7, and even smaller ones are sometimes used. A good contrasty photograph on glossy paper is what is wanted, a soft or "fuzzy" pictures being unfit for the purpose. As to subjects, I might suggest a hundred that, if well photographed and sent to an editor, would find a ready sale. One might try an old man picking up apples and putting them into a bushel measure, the same old gentleman emptying a basket of potatoes into a wagon after having picked them up from the ground, and still other scenes might show the same model sowing seed or doing any other simple task that is a part of farming. An apparently active elderly man or woman always suggests the healthfulness of farm life and they are generally more interesting through showing more character and individuality. Young ladies, small boys and children also make, it seems, a stronger appeal than do people of about middle age. There are a thousand suggestions that I could make as to subjects for farm paper cover illustrations that would be salable; but, should I specify a number of such as they entered my mind, several photographers might set out to those particular ideas and the result would be sameness. Their photographs would be somewhat alike and an editor wants not only an entirely different subject each time he makes up a cover, but he wishes to avoid copying the covers of others. In my own work I find the best way to go about making suitable pictures is to be constantly looking for or thinking of some arrangement that can be secured with the figures and surroundings that are at my disposal. I have in mind quite a number of good "scenes" for different pictures. The subjects themselves may perhaps be people living on an adjoining farm. The particular subject may be awaiting a certain season or some particular event, such as the advent of baby chicks, the ripening of fruit or something of the kind. I find it helps greatly to be always watching the covers drawn by artists for such publications as *The American Boy*, *Saturday Evening Post* and the like. Pictures used for advertising and those scattered through the catalogues of farm machinery and other farm utilities often furnish excellent ideas. These suggestions I jot down in a note book and work into photographs as the opportunity presents. I cannot recall a single instance in which I have failed to sell the photograph made from an idea so obtained. If one will only watch for them he will find ideas everywhere. I once looked into the window of a sporting goods store and saw a large poster showing some boys choosing sides, a picture used to advertise Spaulding's Baseball Goods. Taking this idea as a basis I made a somewhat similar photograph that brought me in about twenty dollars, the first sale being just half that amount. Good suggestions are to be found on every hand, suitable subjects all around us, and the making of good live photographic negatives of interesting subjects is not a difficult matter if one will set about it in the right way.

For the benefit of such of my fellow workers as are not quite sure as to the kind of picture wanted, by the editor of farm publications, I am illustrating this article with a few examples that I have actually sold and all of which have been used as cover illustrations for farm papers. The picture of the boy who has evidently hit his finger while cracking nuts, is from an idea obtained by

PHOTOGRAPHS FOR FARM PAPER COVERS



THE WAY UNCLE SAM DELIVERS HIS MAIL

seeing a similar picture used on the cover of *The American Boy*. The idea of the boys choosing sides has been referred to above, that of the boy at the bat was secured from the same source, while the little boy wheeling the pumpkin resulted from seeing a small half-tone of a similar subject in a seed catalogue. Sometimes a series of small pictures such as those of the mail carriers or "The Way Uncle Sam Delivers his Mail", shown herewith, come in quite handy. When making pictures for cover illustrations one should of course try and make them suitable for that particular purpose; and then, if unaccepted as such yet the work being good, they will no doubt fill the less exacting requirements of the inside pages. Working in that way one can feel quite sure of at least being well compensated for the trouble and expense of making the photographs.

One should try his level best to have every picture that he makes for cover illustration such that it tells its story without the necessity of a title or reading matter beneath, if possible. The prints should be on glossy paper, size 8x10 or 11x14, and one should pack them between pieces of corrugated board or thin wood with their grain running in opposite directions, to avoid damage in the mails. The photographer's name and address should be on the back of each print and it is well to provide a stout wrapper so that it can be turned and used for the return of such as are not accepted. Do not use the ideas shown in the illustrations with this article unless you can make something entirely different. Only a little thought and anyone can find hundreds of good ideas of his own. As explained, all these pictures have been sold to publishers and quite naturally these gentlemen want something entirely different. These

illustrations are presented merely to give the reader an idea as to the kind of pictures that have been accepted and published; they are not offered as subjects to be copied. If you will take time in getting your exposures about right and use fair judgment in making all your pictures tell a story, there is no reason why they cannot be sold to any or all of the publishers using photographs for cover illustrations.

The Holiness of Arts and Crafts

A man is at his best in those periods in which self-interest is lost to him. The work in which a man can lose the sense of self for the most hours each day—that is his special task. When the workman gives forth the best that is in him, not feeling his body, above all its passions and petty devices for ruling him, concentrated upon the task, a pure instrument of his task and open to all inspiration regarding it—that man is safe and superb. There is something holy in the crafts and the arts. It is not an accident that a painting lives three hundred years. We are not permitted to forget the great potters, the great metallists, the rug and tapestry makers. They put themselves into their tasks, and we are very long in coming to the end of their fineness.

They produced. They made their dreams come true in matter; and that is exactly what our immortal selves are given flesh to perform. Each workman finds in his own way the secret of the force he represents. He is an illuminated soul in this discovery. It comes only to a man when he is giving forth, when he is in love, having lost the love of self. Giving forth purely the best of self, as the great workmen do, a man is on the highway to the divine vocation which is the love and service of humanity.—WILL LEVINGTON COMFORT.



Motion Picture Work by Electric Light

By Frank B. Howe and A. M. Klingman



With Illustrations From Various Sources

Almost equal in importance to daylight, for taking motion pictures, is electric light, and many are its advantages. In the first place, with its aid, scenes can be taken at night as well as by day and the companies are made non-dependent upon weather conditions. Secondly, there is no change of light, due to clouds passing over the sun, while a scene is being photographed, and therefore no demand for a retake on account of an appreciable difference in lighting showing in the film. Thirdly, the necessity of retakes caused by the cameraman not estimating the actinic quality of the light correctly is done away with; for with electric light the illumination is always the same. Fourthly, more varied lighting effects are obtainable with electricity than with daylight. Quite obviously, electricity possesses great value as an illuminant for motion picture photography.



EXTERIOR AND INTERIOR NEW ELECTRIC STUDIO—UNIVERSAL CITY

In the main, there are three types of electric lights used for this purpose; the arc light, of which the Klieglight is the personification, our old trusty friend of the portrait studio, the Cooper Hewitt, and the Mazda Photographic Lamp. The Klieglight consists of a wrought iron stand on which is mounted the galvanized hood holding the arc light and the rheostat. In addition, there is a small windlass for raising and lowering the lamp hood at will. This lamp has two sets or pairs of carbons, connected one behind the other so that they consume no more current than would one arc lamp. The Double Klieglight consists of two hoods on one stand with a separate windlass for each. The Kliegl Liliput is somewhat smaller than the others, and the series comprises a hanging lamp for overhead lighting and a stand lamp having a hand feed arc, designed for taking motion pictures away from the studio. Klieglights are particularly suited to the production of such effects as table lamps, fireplaces and the like.



A STUDIO EQUIPPED WITH BOTH COOPER HEWITT SKYLIGHTS AND FLOOR STANDS

The Cooper Hewitt equipment for motion picture studio work consists of banks of these tubes so mounted as to be easily handled. The unit for floor work is their Floor Stand, equipped with eight tubes arranged parallel to each other; and, if desired, the stand may be wired so that there is a separate switch for each tube. The Cooper Hewitt Skylight is the unit for overhead lighting and also consists of eight tubes. It can be hung at any elevation and any angle of light, from horizontal to vertical, is secured. Where it is not feasible to hang them from the ceiling, the bank of lights may be mounted on a Cooper Hewitt Elevator Stand, a high framework with the lamp at the top, giving the same effect as when suspended from above. With this outfit the lamps may be raised and lowered as desired and the inclination changed from horizontal to vertical. For modifying shadows and all purposes where a light from below is desired, the four-tube Cooper Hewitt Footlight Stand, one that throws the light upward into the scene, is brought into use. To protect it from careless feet, or anything falling, a galvanized wire guard is provided. In addition to these lamps for making scenes, the firm manufactures a lamp having a U-shaped tube that is excellent for making titles, but as that work comes within the provinces of my next article, I will postpone its description until that time. The Cooper Hewitt is a very efficient type of lamp, its great advantage lying in the actinic quality of the light and the giving of that light from an area rather than a point.

Without question the high candle-power Mazda photographic lamp has proven of great and distinct value in moving picture work, not only in the studio and as a portable lighting equipment, but in animated advertising work. This lamp consists of the regular internal construction of the high candle-power Mazda lamp, with the exception of the globe, which, in the case of the studio

MOTION PICTURE WORK BY ELECTRIC LIGHT



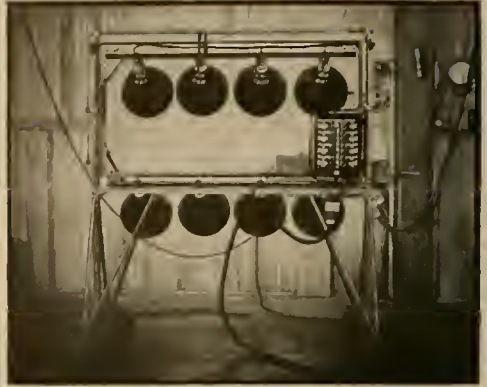
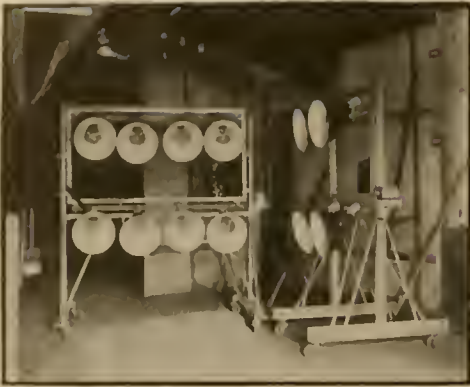
MAZDA LAMPS ADMIT OF PERFECT TREATMENT OF BOTH SMALL AND LARGE SETS—Courtesy Wharton, Inc.

lamp, has a special blue glass that reduces the glare so objectionable to the actors.

The one thousand and one thousand five hundred watts Mazda lamps of various voltages are made identical in size, but, as the actinic of the lamp varies with the voltage impressed on a given voltage lamp, it is important that lamps of the proper voltage for the line at full load, be obtained. If the lamps are burned under voltage, a greater number of lamps will have to be used to produce the required amount of light.

The quality of light emitted by this lamp is of considerable merit, as it makes possible the correct registration of all colors in their true black and white relation. The light emitted is a correct duplicate of photographic daylight and can be controlled to obtain a maximum efficiency by the use of reflectors designed for this particular use. These last are steel enamelled, with a copper collar fitting into the holder. The inside is a pure white enamel of high reflecting efficiency, the outside a dark green. The lamp and reflector are both supported from a holder socket designed for ample ventilation, the holder permitting the reflector to be rotated about the vertical axis to obtain any desired direction of light. The two types of these reflectors, similar in appearance, are designed for different purposes; one is used for side lighting, while the other is designed for overhead lighting. The units are mounted in groups of from four to twelve lamps, or even a larger number, mounted on racks.

The space required is small, the unit assembled occupying only 22x15x15



FRONT AND REAR VIEW OF RACK USING EIGHT ONE-THOUSAND WATT MAZDA LAMPS—Courtesy Wharton, Inc.

inches. The manufacturers have not deemed it advisable to design a standard rack as conditions vary so materially in the different studios that each must be treated separately to give the greatest utility with the least effort. The rack shown is a suggested form capable of being raised and lowered and also of tilting the lamps backward or forward. This, combined with the revolution of the reflector places in the hands of the studio manager a very flexible form of lighting unit. In addition, the combined weight of lamp, reflector and holder being but six and one-half pounds; the stand and trolley system and supports are correspondingly light and movable.

With fewer units and lighter supporting frames, shifting and setups are made more easily, a point involving the time element so precious in moving picture work. The light is a steady, unflickering one, unaffected by air current, while the unit is strictly an electrical one, free from mechanical parts so troublesome when out of order. There is no noise, no inconvenience in "fixing up" units just before a picture, and no auxiliary lighting apparatus in the way.

The Mazda photographic lamp will burn on either alternating or direct current with equal efficiency and numerous adaptations can be made, such as the use of stage dimmers for "fade-in" and "fade-out" work, remote control



SET LIGHTED ENTIRELY BY MAZDA LAMPS SHOWING DETAIL AND COLOR REGISTRATION—Courtesy Wharton, Inc.

MOTION PICTURE WORK BY ELECTRIC LIGHT



A PART OF THE FINE ARTS ARTIFICIAL LIGHT EQUIPMENT

for lighting all the lights on a set or turning them out for particular effects. The renewal cost of the lamp is low and it can be safely ventured that for given conditions under which to operate, the Mazda photographic lamp can be installed at a lower cost than other illuminants used generally in moving picture studios.

The actual making of scenes with electric lights does not differ greatly from that of daylight work. The lights are so arranged about the set that the desired effect is obtained, the scene is rehearsed, the director calls for "lights", they are turned on and the scene is taken. Expense of maintenance for electric lighting of studios is not great, in fact, it is so surprisingly low that it forms only a small fraction of one per cent of the entire cost of the completed picture. The arrangement of the illumination about a set is not difficult, for the lights are on wheels and can be moved at will to secure the exact results desired. As can easily be seen, many effects can be obtained in lighting with electricity not possible otherwise.

Electricity is coming into great favor in making night exterior scenes both on location and on large sets, especially the latter. For this work the lights are arranged about the set and are sometimes supplemented by flares, which last might be termed continuous flashlights as they work on the same principle, the difference being that they give a continuous intensely actinic light. These are produced by a long tube, having a fuse at one end, that is either held in the hand or fastened upright for use. They are made in various lengths to burn from a few seconds to four minutes. The advantage of making scenes representing night happenings at night, rather than by the old way of taking the scene by day and gaining the night effect by underexposing the negative and tinting the positive blue, is easily apparent when compared on the screen. About the first use of real night scenes was in the Griffith production of "The Birth of a Nation", and like real night productions are now frequently used.



A Home-Made Post-Card Album

By Tracy I. Storer



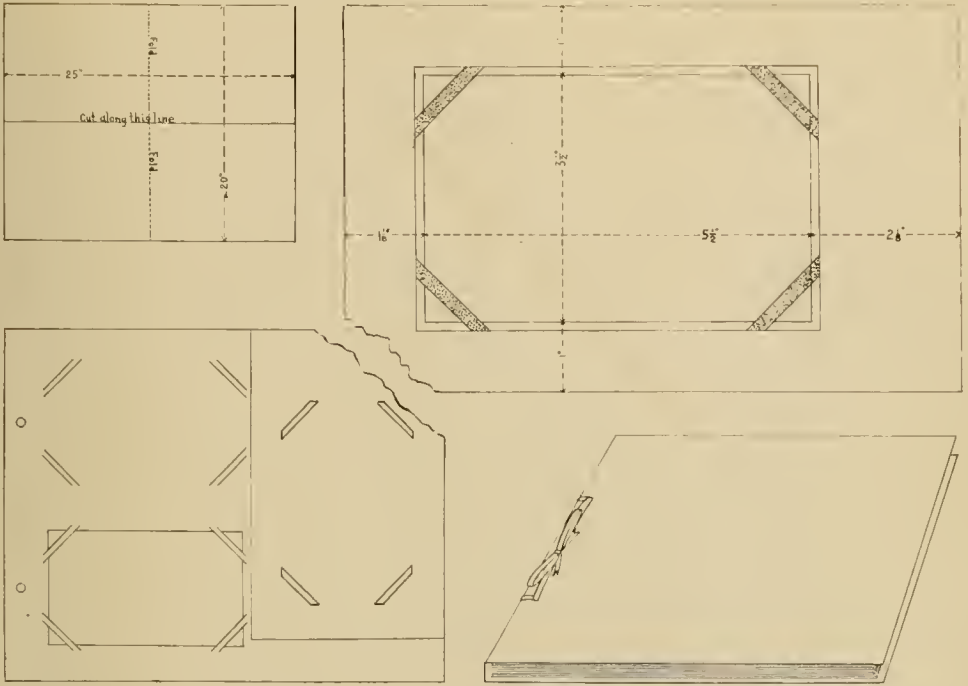
Recently I had occasion to prepare an album to hold a small collection of picture post cards, and the plan devised proved so successful and convenient that I believe others might make use of it to advantage.

From a paper supply store secure some sheets of what is known to the printing trades as cover stock. This is commonly sold in sheets 20x25, or 22x28 inches, and in two grades, light or single weight and heavy or double weight. There is usually more than one finish to choose from, and of these the plate or ripple finishes are more to be preferred for the album than linen finish; but this is a matter of individual taste. For the cover of the album a sheet of 22x28-inch double weight is needed (this will provide covers for two albums of the size hereinafter specified), and for the inside pages sheets of 20x25-inch single weight stock to the number of one-fourth the number of finished leaves required. In the book which I constructed, brown was selected for the cover and black for the leaves, both in a rather dull plate finish.

For the inside pages the 20x25-inch sheets are cut down the center of the 25-inch way as shown in the first figure. When folded across the center on the shorter dimension as shown in the same figure, these pieces each form two-leaved folios with pages 10x12½ inches. When the requisite number of folios has been prepared, the cover is cut. Its dimensions are ten and three-quarters inches wide by twenty-five and three-quarters inches long, plus the height of the assembled pile of folded leaves. It is a good plan to round off the corners of the cover sheets to prevent their becoming "dog-eared." Another good plan is to use a whole sheet of the selected cover paper for each cover, using it folded double with the fold at the top. If quite heavy covers are desired, one can, after the album is otherwise completed, insert two pieces of mount board inside this fold, one in front and one back, tacking them in place with a few touches of glue.

For cutting the slits by which the post cards are held to the pages, construct a cutting form of stout card, stencil board, or light metal, making its outside dimensions 5½x8¾. One and one-eighth inches from the left hand end and equidistant between the two sides draw an oblong 3½x5½ in size. One-eighth of an inch outside of this draw another outline, and then, using this last outline to indicate the end of each slit, cut away the four dotted areas shown in the upper right hand figure. The dotted areas should be completely cut out of the form, and their sides, against which the cutting knife will run, may, if the form be other than of metal, be reinforced by strips of card or stencil board pasted along them. To use this form the separate folios are placed on a suitable board for cutting, the form placed in position, and cuts made through the material of the pages by running the cutting knife along the sides of the

A HOME-MADE POST-CARD ALBUM



four apertures in the form. For cutting the slits to hold cards vertically, the end of the form having the wide margin is placed flush with either top or bottom of the page and the long side of the form flush with the free or outer side of the page as shown in the lower left hand illustration. The two sets of slits for holding the horizontally placed cards are cut by placing the form with the narrow margin end of the form flush with the folded or ten-inch edge of the page and the longer side of the form along first the top and then the bottom twelve and one-half inch edges. In this manner slits are cut for holding three cards on a page, two horizontally and one vertically.

It but remains to slip the cards into place by bending their centers slightly upward away from the page, assemble the folios within the cover, crease the latter at the back, perforate both sheets and cover as indicated in the lower right hand sketch, then tie the whole together with cord or ribbon passed through the perforations, these last being half an inch from the folded or back edge of the pages.

By appropriately modifying the dimensions of the cutting forms, others may be constructed for cutting slits to hold the various sizes of prints, the same or a different sized page being used. In albums of over fifteen pages, some strips of the cover stock should be introduced between the leaves at the binding edge to compensate for the additional thickness caused by the insertion of the prints or post cards, particularly the latter.

You will not comprehend a great artist at first glance any more than you will fully appreciate Shakespeare on the first reading.—JOHN C. VAN DYKE.



Photography For Its Own Sake Purely

By Sigismund Blumann



Art depends quite as much on art lovers as upon art creators. The painter may spend lonely weeks upon a canvas, fancying he cares nothing for any human opinion, yet the years of his study and the utmost of his efforts are in conformation to more or less established forms. If, happily, Fate has given one the inspiration of a new way of conveying his emotions and he establishes a school of his own, he still feeds and his genius grows on appreciation or the hopes of appreciation from posterity. Let us leave out of consideration the patrons. The cultured dilettanti, whom we are all too prone to hold in contempt, or at best to tolerate, are the great lovers of art. The musician would probably make his songs on a desert island; but, did he harbor no hope of some day being heard, his song should die to a wail on his lips. The birds whose mission is to trill, seek company. Man is never so gregarious as in his refinements.

Of the thousands who buy cameras, probably less than half the number ever learn to appreciate, even mildly, the best in photography. Less than a quarter grow to love it, to appreciate it, as a real art, while only a small contingent, very small indeed, attain to greatness in the creative. Those making up the vast army of snapshooters have their place and their use. The tradesman, the proprietor of the finishing shop, can tell you about this. The makers of real pictures are of the nobility. But those lovers of photographs who, after years of striving, arrive at the conclusion that they lack the creative faculty, yet cannot leave the hobby, pastime, fad—what you will—are as essential to photography as the audience to the orator. I have in mind some of the most eminent pictorialists whose great incentive is the occasional Salon. They might not make pictures for themselves very long.

It is for the lover of real photography who cannot make real photographs that I present this brief. Let us welcome him and exalt him, and feed him on the best. May his tribe increase. He brings to the Salon a disinterested appreciation that one photographer seldom accords another. He is not in the competition; he is not warped by emulation nor prejudiced by being a follower of any school. He comes to enjoy. If we cannot freely give him his due and must treat him only tolerantly, let us at least give him sympathy. There may be pathos in his case.

Consider the writer, who has owned about every make and size of camera, every lens, who at this time finds himself with a residue of five of the former and six of the latter; who has spent precious hours in the field and in the dark-room; has tried everything and every way to get out of himself something he feels is within; but has failed. Consider his disappointment and discouragement. Eventually, like a childless woman, he has settled to the consolations of the children of others. He could not enjoy your pictures as thoroughly did he make

equally good ones. He has never neglected photography. The hours you spend so profitably to yourself and to photography, in taking and making pictures, he devotes to studying the technical side of the art. He is devoted to the science of things. His knowledge is at the service of all who need it and he is unstinting of his time. Shall he be kept without the pale?

And the writer is one of a large number. He is a type. To the many eminent workers who know him and are kind enough to tell him he has been a help in their upward way, his position, individually, is known, accepted, praised. But there are thousands of which he is a type. Take them with you in your aspirations. Let them see your work. Make it evident you are appreciative of them. Talk with them and take them into your councils. They may have something to give you that shall prove very decidedly worth while. They live near you, belong to your clubs, may be found at your exhibitions; some time may come to your door. The first few Salon awards sometimes breed arrogance; this too often survives the novelty of the consciousness of greatness. Subdue that spirit for your own sakes and be assured you should miss the dilettanti and suffer a great loss were they eliminated.

Somewhere in your community there is a modest Ruskin. Turner lives by his own works, truly enough; but you who have never seen one real Turner painting know his greatness, not from his canvases, but by grace of the appreciation of that greatest of dilettanti, Ruskin.



Different and Indifferent Treatment

By Mrs. W. S. Washurn



Having some little reputation for good taste in the matter of dress material, house furnishings and the like, I am often asked to accompany my women friends on their shopping tours. As it happened, two of these took me, last week, to two different photographic "studios" as I believe they are called. The difference between the reception accorded in these was so great that I feel I should, although not a photographer myself, do a little writing for the photographic press, not only to point out the mistake of one photographer, but to call attention to the good business policy pursued by the other, leaving the reader to draw his own conclusions as to the value of the comparison.

The first afternoon I went with Mrs. Smith to a photographer who had been turning out good work in our town for a number of years, my companion wishing a picture of herself and daughter, the latter being about to leave for school in another town. On entering the reception room we found no one in attendance but a wait of a few moments, standing at the desk, brought forward a rather unkempt assistant, who, finding pictures were wanted, retired and sent forth the proprietor himself. The latter had evidently been disturbed at some form of work because he seemed very anxious to get through with his business with us as soon as possible. Learning that a sitting was wanted at once he

asked to be excused for a moment, remained away a little over ten minutes, and then gave us attention and the sitting required. As the order was a fairly good one, this last part was carried through in a fairly courteous and attentive manner, and yet we could not help thinking that our visit was not exactly a welcome one.

The very next afternoon a shopping expedition with Mrs. Brown brought us to the studio of another photographer, this time for a full length picture of my friend in her latest hat and gown. As we entered we found a busy little lady engaged with two visitors at the desk. She immediately asked to be excused a moment, conducted us to a seat at a small table, placed before us three or four neat, clean copies of the latest women's magazines, including an English one that we were very glad to see, sat a portable telephone on the table and made connections, expressed regrets and explained that she would be at leisure in a few moments. As the two at the desk left she at once returned and seated herself with us, brought the necessary samples to us a few minutes later; and, as I believe by a private signal, brought the proprietor, who is his own operator, into the room, just as we had decided the style wanted and expressed a desire to have the sitting at once. This gentleman gave us his best attention and the sitting was made as if Mrs. Brown was the only customer and no others were wanted. There was no haste, no nervousness, no interruption; except, just as the sitting ended the photographer explained that he had tea served to his two assistants and himself every afternoon at about that time and if we would give him the pleasure he would like to have us sample it at the table we had been seated at in the reception room. The tea was excellent and we found ourselves enjoying the rest. Somewhat different from the desire I had felt during the previous afternoon to be again downstairs and on the street.

On our complimenting our host on the excellence of the beverage he insisted that we prove our appreciation by calling at about that hour and again sampling it when we came to see proofs two days later. The reader, and I trust he is a photographer who can profit by this comparison, can well believe that I, as a shopping companion in quite constant demand, had a decided preference for one particular photographic studio thereafter, a preference that resulted in not a few new customers being introduced to him. Mrs. Brown, of course, was already a friend, while Mrs. Jones later found it not at all difficult to transfer her patronage to the photographer Mrs. Brown and myself so highly recommended.

I promised to let the reader draw his own conclusions and there are really no comments that I need add. Pictures may be of the best, prices may be entirely satisfactory, promptness of delivery may be made a feature, and yet service and courtesy will draw the business elsewhere. I would not wish to suggest that every studio serve tea, subscribe for several women's magazines, equip their reception room with telephone extensions, or even go to the expense of a "busy little lady" to attend to customers only, but I would urge the photographer to furnish the little courtesies and consideration that he can, assuring him that they will be appreciated and paid for in added and increased patronage as the months roll around.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

PLATE-SUNK MOUNTS: The article in the August number telling how to make plate-sunk centers on photo mounts reminds me of an old yarn about the Vassar girl who undertook to explain to her grandmother how to suck eggs. It began something like this: "You see, Grandma, we perforate an aperture in the apex and a corresponding aperture in the base, and then by applying the egg to the lips and forcibly inhaling the breath the shell is discharged of its contents." And the good old lady then commented on the wonderful improvement since her young days when, as she said, "we just made a hole in each end and sucked."

Maybe all the paraphernalia described in the article referred to will permit of better work, and doubtless it would plate-sink heavier stock, but the only "tools" I use aside from pieces of card board cut to the size of the desired panels, was a glass stirring rod and a couple of common pins. The instructions should read: Lay your mount face up on any smooth table top, and put the cardboard templet upon it, centering it carefully. Then stick the pins through both, far enough from the edge so the print will conceal the pinholes, and invert the whole. Next go lightly around the edge of the templet with the stirring rod held at a low angle, its smooth end pressing into the corner made by the templet and the table, and after making sure you know where the corners are, go around again with more pressure. The job is done. Effects vary with the thickness of the cardboard templet and the pressure with which the stirring rod is applied, but unless the mount is of very tender stock any desired depth can be secured.—E. R. P., Vermont.

AVOIDING GRAIN IN COPY NEGATIVES: If, when one has a copy negative to be made from an original on rough paper, he will make the negative much smaller than the original and then make the enlargement from this small negative he will avoid much of the grain that seems so closely associated with working in the usual way. When a copy negative is made the same size as the original, as is generally done to facilitate retouching, grain that is hardly perceptible in the negative is badly in evidence in the resultant enlargement.—E. D. C., Vermont.

PUSHING THE SMALL SIZES: We all know that the public want something different and we likewise know that they like to be advised to purchase something they may want. While all the other photographers are trying to sell their customers the largest sizes possible, I work in just the opposite direction. The arguments are numerous. The small picture is much more likely to be treasured and retained than the large one that becomes so easily soiled and is

always difficult to place. The subconscious mind always places more value upon a small object of an artistic nature than upon a large one, the small picture implies a degree of modesty that the large one invariably discredits, the small picture can be given to a much wider circle of friends and relations, all or nearly all grateful recipients, than can the more loud and pretentious picture of larger size, and for the price of the few large ones a larger number of the smaller kind, having even better quality, can be ordered. And one must not imagine that I am selling small pictures at a low price. I try to make my small prints of exceptional quality and have little trouble in convincing my customers that the small print is of better quality than the usual thing in the large size, doing this generally by the simple expedient of allowing them to compare the two. The smaller print being different, generally a nicely vignetted bust picture of the miniature type, they find in it the something different that they crave and prefer it to even the best quality in larger sizes. True, I cannot charge as much for a dozen of these small prints as is done for a like number of large ones, but I get orders for a larger number, which makes up for the difference. Besides, for the same amount received I do much less retouching, make fewer proofs, and of course use less material. In addition, making the sittings is a more simple matter requiring less plates because fancy poses and lightings are not in order in this class of work.—W. A. S., Illinois.

COLORING GLOSSY PRINTS: An Eastman demonstrator showed me an excellent method of coloring glossy or squeegeed prints, or rather, of coloring prints to be turned out in that form. The secret lies in first soaking the print for three or four minutes in a five per cent solution of phospho-tungstic acid, blotting off all superfluous water, and then coloring, while still damp, with Velox Water Colors, applied with as little water and as dry a brush as one can use. If the coloring is to take some time, lay the print on a piece of blotter that has been soaked in the phospho-tungstic acid bath, so that it will stay moist and the brush not dry out too fast. After coloring, return the print to the bath for a minute or two and then squeegee at once to the ferrotype plate.—E. T. R., Washington.

CLEAN LANTERN SLIDES: I recently had some lantern slides to make and wanted them absolutely free from dust specks and like defects; and, as the negatives from which they were to be made were to be selected from a large number, I could pick out such as were themselves free from any defects of this kind. To avoid any trouble from dust or dirt in the fixing bath I purchased a number of cheap saucers and used them for fixing trays, placing the slides, as developed, face down in these. Washing was done by placing the several saucers containing the fixed slides in the bottom of the bath tub and turning on a gentle stream of water.—A. S. D., Florida.

The further one advances along the ways of art, the more one prefers the fleeting and mysterious things to the well-defined objects. A mere whitewashed wall is nothing, but enriched by a diaper of sunlight and shadow it becomes a delight.—ANTONY GUEST.

CAMERA CRAFT

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The Cleveland Convention

The last, the thirty-sixth Annual Convention of the Photographers' Association of America, held at Cleveland, seems to have fallen a little short of expectations, both in attendance and number and quality of exhibits. Of course the program was excellent, but there was little or no excuse for the mistake of the Cedar Point trip, as former conventions have demonstrated the undesirability of such attempts at an outing within an outing, as an interruption of business, not to mention the expenditure of time, money and energy not worth the result. The other inconvenience most objectionable to the few attendants from whom we have heard resulted from allowing the public,—“the rabble”, one of our friends used as a designation of the particular part of the public that was in evidence,—free admission to the demonstrations, as well as to the exhibits. Another correspondent in commenting upon this asked why the photographers were expected to pay dues, while the public,—which evidently included such photographers as did not care to pay dues,—were admitted free to all privileges, except perhaps voting.

Of course, business has not been of the best for photographers for the past year or more, or at least, that is one explanation made, but this does not seem to square with the reports that reach us from several sections. Perhaps the hot weather kept down the attendance. The attractions in the way of lectures and demonstrations were certainly all that one could ask, making perhaps the best combination that has ever been offered at a convention, but the photographers did not attend, at least, not as they were expected. It might be that a return to the old method of looking to the photographic press for publicity and co-operation, rather than to the getting out of its own publication, might be a move for the better. With the several excellent photographic magazines of the country always ready and willing to devote practically unlimited space to the activities of the Association, the reason for a publication exclusively devoted to its interests is hardly apparent. The latter can hardly have the same good influence as was secured under the former plan, and its influence can not be as widespread and effective. Under the old system, each of the regular photographic magazines would have had, in sufficient time for their current issues, typewritten reports, including the addresses and lectures, and these would have been published for the benefit and enlightenment of those who did not attend, inspiring them to be present at the next in order that they might share in the benefits at first hands.

We have no quarrel with those responsible for the publication of the Association's own official organ. Were there any precedence therefor, were the photographic press other than unstinted in the matter of publicity and encouragement, were there any advantages to be derived, the matter would not be men-

tioned. We ourselves have never felt the need of convention reports to fill space and the effect of an additional photographic publication upon our own circulation we feel quite sure is negligible. We are simply trying to find some other more logical excuse for at least a part of the lack of attendance than the only two we have heard put forth, poor business and hot weather.

Our Farm Paper Cover Competition

At the risk of tiring our readers we bring up this subject once more, feeling that an explanation is due those few who have taken an interest therein. The interest has been small, at least it is small in comparison to our total number of readers, and therefore we feel that space we had hoped to devote to the subject can be used for something that will be of more general interest. The making of pictures suitable for farm paper cover illustrations is easy, interesting, and it offers remuneration that is not offered the amateur by any other field as easily entered. In view of the large number who write us concerning a possible market for their photographs, we fail to understand the disinclination of our readers to interest themselves in this line of work. Mr. Blanchard's article in this issue may inspire a little interest; at least, we hope that it will. Could we but get some dozen or more of our readers to take up this work we would be only too glad to go to the trouble of helping them individually, but we would then have something prospective with which to enlist the interest of the publishers of farm papers. This interest enlisted, we would be in a position to put our readers in touch with the best market and put them in possession of information concerning the requirements and prices paid that, as separate individuals, they would spend some time and postage in securing. Please, every reader who is interested in this work or who is made so by the article mentioned, let us hear from you in order that we may decide whether to continue with our efforts along this line, or otherwise.

Mr. and Mrs. Bissell In The City

Mr. and Mrs. L. H. Bissell of Effingham, Illinois, are spending a couple of weeks at the home of their daughter, Mrs. J. F. Magee of this city. Their visits have heretofore been made during the winter months so that this time our rainy season is being avoided and their appreciation of our equitable climate is even greater than ever. Mr. Bissell, as all our readers know, is President of the Illinois College of Photography and the Bissell College of Photo Engraving, besides being an Ex-Mayor of his home city and an enthusiast on any subject touching upon the welfare and improvement thereof.

It is related that at our Academy exhibitions of many years ago a landscape by Mr. LaFarge excited a lot of criticism. One of the many objectors asked William Cullen Bryant if he had ever seen anything like it in nature. Mr. Bryant did not give the oft-quoted reply made by Turner on a similar occasion, but gave one better worth remembering. It was: "No, I do not see anything like that in nature; but no doubt the artist does, and it is his one business in life to tell us what he sees, and not what I see."—THE MACBETH GALLERY *Art Notes.*

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

The Swing Front

The swing front is a camera movement of a most useful type, yet one the advantages of which are very frequently misunderstood. To state its purpose as briefly as possible, we may say that it is nothing more or less than a substitute for the swing back. Given a sufficient range of movement it will do all that the swing back will do, and do it, not more efficiently, but more easily, that is to say, it is far less trouble to manipulate. The two principal uses of the swing back are dealing with high objects that cannot be got on to the plate without tilting the camera, and dealing with subjects of great depth that cannot be otherwise recorded in a sufficiently good focus unless we stop down the lens.

Considering first the prior function of the swing back, let us assume that we have such a high object and that we have secured it all on the focussing screen by tilting the camera. The swing back then comes into play, and we have to set it so that the back is vertical, thus making all vertical lines appear parallel and vertical on the screen. If we now study the relative positions of screen and lens it will be manifest that the former occupies just the same position relative to the object as it did before we tilted the camera, while the thing that has really moved is the lens, which is now higher up and also inclined towards the center of the plate, instead of being horizontal. If the camera had been provided with an efficient swing front we could have shifted the lens to precisely the same position without interfering with the camera body at all. In the case of a stand camera the tilting of the camera body is often a troublesome business, especially if the tripod is not fitted with a special tilting top. The tripod legs usually have to be shortened or lengthened to get the required tilt, while the final pose of the camera is often a dangerously unstable one. On the other hand, with a swing

front, having found that the building, or whatever the subject may be, is too high to be included with the camera as normally adjusted, all we have to do is to loosen the screw heads which lock the swing front movements, raise and tilt the lens to the required position, and then tighten the screws again. The whole of this adjustment may take only a few seconds, whereas the necessity of tilting the camera as a whole may involve sundry dodges and expedients taking several minutes to arrange.

It will be noticed that when the swing front is used to produce the required conditions the lens is both raised and tilted. The rise is obtained by means of the rising front, and the tilt by means of the swing mechanism. The rising front does part of the work, but alone it is incapable of serving as a complete substitute for the swing back. However much rise is provided the extent to which it can be used is limited by the covering power of the lens, and as soon as we get near the limits of this it becomes necessary to tilt the lens so as to keep the plate within the circle that the lens will cover.

Swinging the lens has, of course, just the same effect on focus as the use of the swing back, and therefore in most cases stopping down is necessary to secure sharp focus over the plate. Users of the swing back are, however, familiar with its use for securing better focus without stopping down in the case of objects of considerable depth which lie more or less in a plane receding from the camera. Thus the portrait photographer will sometimes swing the plate in his studio camera slightly backwards for the purpose of securing better focus of both feet and head in the case of a sitting client. The sole advantage of this is that it saves stopping down the lens, but this is at times a very material advantage. Against this we have to set the disadvantage that with certain subjects it will introduce distortion.

Precisely the same relative positions for lens and plate can be secured with a swing front, but we can also do better, for we can get a little of the same effect without introducing distortion. To reproduce with a swing front the exact conditions described as existing with the studio camera, we should have to tilt the camera upwards and then lower and swing the lens downwards until it becomes horizontal, but we can also effect a material improvement in focus by simply swinging the lens downwards without shifting the plate from the vertical, and this simple adjustment—which is impossible with the ordinary studio camera—may do all that is required.

In the case of outdoor subjects swinging to improve focus generally involves a side, not a vertical, swing, so the question of distortion in the shape of converging lines does not become a matter of moment. It is only horizontal not vertical lines which are so affected, and the error is unnoticeable. As a rule, a side swing back is an abominably unsatisfactory movement when it is provided. At the best a very small amount of movement is possible, while this small amount generally involves straining and twisting of the brass fittings in a fashion by no means beneficial to the camera. The more usual type of swing front is also only adapted for vertical use, but one of the more modern reflex types of cameras is fitted with a kind of universal swing front capable of movement in all directions, and this is a most convenient and valuable feature.

With hand cameras generally, not of the reflex type, a swing back is an awkward thing to use, and even the swing front presents difficulties in view of the fact that we cannot very conveniently watch the effect produced on the focussing screen. Automatic types of swing front, in which the lens cannot be set in any position in which it does not point directly to the center of the plate have been devised, but in all cases there is a little difficulty in securing the best possible focus. With the reflex there is no such difficulty, and a swing front is a most valuable attachment. In fact, if a swing movement is desired it is the only one feasible, for a swing back is an almost impossible thing to arrange in such a camera. It may be that the swinging movement is

very seldom required, but when it is, it is of great value, as Dr. Abrahams has often shown in his well-known photographs of sporting and athletic events.

In purchasing apparatus of the stand variety it should be remembered that the swing front is only of limited use if the rising front has but a small range of movement. Pretty well all types of the so-called "field" cameras have a certain amount of swing arranged for in the front, but only a few have sufficient rise to permit the swinging movement being used to advantage. As a rule, with most of these cameras the swing back has to be brought into play, and while this will make up for the deficiencies of the front movements nothing is gained in the way of convenience. To reap the full benefit of a swing front we want such ample rise that the swing back will never be required excepting perhaps in very extreme cases. One of the best types of front is the well-known Sanderson pattern, which has practically all the range of movement likely to be required. When a side swing is employed for improving focus a cross front is useful, and in fact necessary in most cases. This will generally be found provided in any cameras fitted with a side swinging movement. A hand camera fitted with vertical swing and rising front can, of course, be used on its side so as to convert the movements to side swinging ones, and while such use of the camera may be a bit awkward at first it affords a good way of compensating for the absence of a universal swing movement that can be employed in any direction.—*British Journal of Photography*.

Improving Sulphide Toned Prints

Harry E. Smith, writing in *The Photographic Journal* on the Reducing of Sulphide-toned Bromides, places the mixture which can be used for the purpose in the following order of merit:

Cupric chloride and sodium chloride in aqueous solution; cupric bromide in aqueous solution; cupric chloride in aqueous solution; chlorine water; bromine water; iodine in aqueous solution of potassium iodide; iodine in aqueous solution; iodine in alcohol, and, solution of potassium permanganate acidified with sulphuric acid.

A satisfactory working formula consists of equal parts of five per cent copper chloride solution and fifteen per cent sodium

A PHOTOGRAPHIC DIGEST

chloride (salt) solution; after using which the prints are washed for five minutes, fixed in hypo of the ordinary strength, and finally washed as usual. To improve the color of a sulphided print the latter is treated with the cupric mixture, washed for five minutes in running water, treated with five per cent nitric acid for about two minutes, again washed for five minutes, and then again placed in the sulphide solution. In many cases the tone is changed to a warmer and richer brown.

Later, in *The Photographic News*, Mr. Smith advises that when a bleaching solution of ferricyanide and bromide has been used, any prints too dark may be corrected by again treating for, say, five minutes with the bleacher and again sulphiding. Result: a rich sepia much warmer in tone.

In the same journal he says: One satisfactory method of reducing a sulphide-toned bromide print is to place it in a hypo-alum bath and heat it in the same manner as one would an untuned bromide. The color is, if anything, improved.

Still later, the same writer, in a paper on the chemistry of reducing sulphide-toned prints, in the pages of *The British Journal of Photography*, recommends as the best reducer:

Cupric bromide..... 3 grammes
Sodium bromide.... 25 grammes
Water.....100 cubic centimeters

This bleaches a sulphided print almost as rapidly as the sepia bleacher does an ordinary print, and the above mixture should, therefore, be mixed with three times its bulk of water to modify its action.

For reducing the red chalk, gold-toned sepia prints the best reagent is a mixture of cupric chloride, made by mixing equal parts or five per cent copper chloride solution and fifteen per cent sodium chloride solution.

A writer in *Photo-Notes* advises re-toning as follows: It is well to use a strong bleacher such as: potassium bichromate, ten grains, hydrochloric acid, twenty minims; water, one ounce, when re-bleaching prints which have failed to darken or to give a good tone in the sulphide bath. And it is well to allow bleacher to act for from fifteen to thirty minutes to make sure of complete action. A one to five rodinal developer applied to the washed print will usually give a strong image; if not, a short exposure of the print to strong light should be tried,

and if this fails to yield sufficient density in five minutes let the print soak in the developer for another ten minutes, then wash and transfer it to an ordinary strong bromide paper developer, such as amidol or metol-hydroquinone. If none of the image has been destroyed by the hypo in the sulphide solution, we shall, by these means, produce a good strong result, which may be black if the re-development has been rapid, or a fine rich brown if the development was slow. If desired, we can then re-tone, using quite fresh solutions; but, as a rule, the brown tone arrived at in the process of re-development is a far finer color than any possible by sulphiding methods, and it may be well left alone.

F. Winning, writing in *The British Journal of Photography* recommends the following process for the after-treatment of sulphide-toned prints which may require improvement in respect to either color or depth. Make up a mercuric bromide solution as for intensifying plates:

Mercuric chloride.....100 grains
Potassium bromide100 grains
Water 10 ounces

The sulphided print is placed in the above, and for some perhaps about fifteen minutes, no apparent change takes place, after which it gradually bleaches to a greenish yellow color. Wash, and then pass through three baths of weak hydrochloric acid. Wash, and then re-develop in any clean-working developer. The final result will depend on a variety of circumstances, the exposure, the first development, the time left in the mercury, etc. Although the print, when put in the mercury solution, shows little or no change, the mercury is acting, and if the print is taken out in five minutes and re-developed the result will be a cold brown color and slight intensification. The longer in the mercury solution the colder the final result and the greater the intensification. With some papers it is found that olive green tones are got after the mercury treatment. The only way is to try it and find what length of time is required in the mercury bath to give the final result required. If a very pale foxy sulphided print is produced, and is then bleached in the mercury and then re-developed, a very fine rich black is produced. Prints made five years ago by the above process have shown no sign of fading.

"Beegee," in the same journal, advises the following method: The sulphide-toned prints are bleached in the dark room by means of a bath made as follows:

Copper bromide.....130 grains
Sodium bromide.....2½ ounces
Water, up to..... 10 ounces

When bleached, the prints are rinsed thoroughly, and should be then taken into daylight, after which they may be re-developed in any non-staining developer, metol-hydroquinone or amidol without bromide being most suitable. This requires no fixing. The print may now be re-toned by any usual method.

T. Ribbans, in *The British Journal of Photography*, gives a method of improving sulphide-toned bromides. He says: In the case of prints which, after toning, are muddy, or have a yellowish tint over the high lights, the following method, effects an improvement: After toning with the sulphide, immerse the prints in a weak solution of iodine in iodide, afterwards putting them straight into the hypo bath to clear away the blue stain. The prints are then well washed. In the case of prints toned with hypo-alum it is necessary to wash well before and after iodizing.

As to bleaching sulphide-toned prints, R. E. Blake-Smith in the same journal, gives as the best bleaching bath for a print which has been sulphide-toned and requires to be re-converted into one of black color the following:

A: Potassium permanganate...10 grains
Water 5 ounces
B: Sodium chloride.....¼ ounce
Alum¼ ounce
Con. sulphuric acid.....25 minims
Water5 ounces

The actual bleaching bath is compounded by taking one part of solution A and adding it to four parts of solution B. This bleacher works very quickly, and it does not give off noxious chlorine vapor, but is quite pleasant to use. The print is first soaked for two minutes or so in water and then immersed for ten minutes in a saturated, or nearly saturated, solution of alum. After this it is rinsed under the tap for a few seconds and then put into the permanganate-chloride bleaching bath.

After bleaching there is almost always left a slight yellow, oxide or manganese, stain on the paper, especially where bleaching has

taken place, on the parts previously occupied by the image. It is best to remove this stain before re-development, and in order to do this the print, after rinsing, is placed in:

Alum¼ ounce
Sodium sulphite, crystals. 6 grains
Con. sulphuric acid..... 5 minims
Water 5 ounces

and when stain has disappeared, the print is washed in running water for about ten minutes, and then re-developed in:

Amidol 6 grains
Sodium carbonate, crystals. 6 grains
Sodium sulphite, crystals. .35 grains
Water 2 ounces

Finally a thorough wash brings the process to an end.

A Long-Focus Lens—And Why

It is often very desirable to have a long-focus lens, because it enables us to obtain a larger-sized picture of a given object from a more distant standpoint than the short-focus lens does. The advantage of this greater distance is that a more pleasing view of the object can be taken, giving a better picture. It is well known that a box, for example, if viewed close to, has its horizontal lines "vanishing" very rapidly into one another. Now if this view is transferred to a flat picture the result looks unnatural. Hence the great advantage of long-focus lenses in portraiture and genre photography.

It is commonly explained that with the longer focus lens on the same sized plate better "perspective" is obtained, because of the smaller angle included, and that, per contra, all wide-angle lenses give bad perspective. This is quite wrong, perspective being a matter, not of angle of view used, but of the standpoint from which the view is taken. The usual size of plate for which a "universal" anastigmat is catalogued is reckoned so that an angle of view from fifty to sixty degrees is obtained. Now this angle has not been decided on by chance. By common practice for centuries, artists and architects have drawn their views to include an angle of about sixty degrees, as it has been found that this allows the eye free vision and a natural effect. Hence we have always been accustomed to an angle of view of sixty degrees in viewing pictures, and it is only right to choose the same angle in photography. Two facts in confirmation of

A PHOTOGRAPHIC DIGEST

this view may be noted. Many of the "impressionist" painters have used a larger angle of view in their pictures, and this accounts for much of the unnaturalness which we associate with impressionist paintings. On the other hand, the cinematographer has gone to the other extreme, and rarely uses a larger angle of view than thirty degrees. This is partly because the lens he uses has to be extremely rapid, and in photography rapidity of vision is inconsistent with breadth of view. The effect of this is that, in watching the cinematograph, the eye has a cramped feeling, as if its view was confined, as in looking through a tube. In views, then, we may take sixty degrees as the field of view for best results; but for single objects—portrait and genre photography—that angle need not be regarded at all.

We therefore choose our lens of such size as to give a picture on a given scale at the necessary distance from the object. The size of plate now need not be greater than that necessary to include the object, but, of course, it must be at least this size, and the lens must cover that size of plate. The choice of aperture and the amount of stopping down that will be permissible must be decided by the kind of object to be photographed. Machinery, for instance, will require a certain amount of stopping down to bring all the parts into focus, and the longer the focus of the lens the more the stopping down that will be necessary; but as the machine will stand still indefinitely, the long exposure entailed by the small stop can safely be given. If, on the other hand, we are taking large-scale photographs of flowers in a garden, the exposure must be rapid to prevent movement, while the depth of focus required will not be great.

Thus, having chosen our focal length to get a good picture, and our size of plate to include the picture, we must choose our lens according to our requirements in these two matters and to the character of the object to be photographed.

First, there is the obvious method of buying an anastigmat of long focus and similar aperture and properties to the short-focus lens we have been using. This method is rather expensive, as the price of a lens increases approximately in proportion to the square of the focal length. It has the advantage, however, that pictures as good in every

respect as those taken with the short-focus lens can be made, with the advantage of larger size or better "drawing." It is, therefore, the method to adopt when good definition is required with either large angle of view or large aperture. Professionals, therefore, have a long-focus anastigmat either for commercial work (where a large field of view is sometimes necessary), or for portraiture where a large aperture is essential. Amateurs, however, to whom art is a consideration, will prefer to use one or other of the following less expensive methods.

The second device is to use a lens of the "convertible" type. Here a longer focus can at once be obtained by using either of the halves, giving longer focus at a proportionately less aperture. This has the advantage of not costing any more than the original lens, except in so far as this property has been paid for in the initial outlay. There are two types of convertibles—the eight-lens and the six-lens types. The single component of the eight-lens will usually give good definition over a larger field than that of the six-lens. It can very often be used on a larger size of plate than the complete lens, whilst this is not so with the half of the six-lens, which, giving good definition over a smaller angle, will only cover the same size of plate as the whole lens. The eight-lens anastigmat has, therefore, a definite advantage over the six-lens as regards convertibility, but is, of course, a much higher priced instrument.

The third expedient exists, with certain types of lenses, of substituting another lens for one of the components, whereby the focus is lengthened; at the same time the field of view and aperture are decreased, so that the same size of plate is covered at much smaller aperture. The supplementary lens is, of course, an extra cost, but the property of conversion is not paid for, whether it is wanted or not, as in the convertible class of lenses.

The last resort is the telephoto lens, by which extra focal length is obtained without increasing the camera extension required. There are two kinds of telephoto lens—the variable magnification and the fixed magnification kinds. In the first a negative lens is fitted behind the ordinary anastigmat, and by varying the separation between the two a certain range of magnifications is obtained. In the second kind a complete telephoto lens

has to be bought. In the matter of quality the fixed magnification, while limited as to the focal length obtained, gives good definition over the same size of plate which an anastigmat with the same back focus will cover, and can be made with large aperture, up to $f-6$ or $f-5.4$; while the variable magnification is only corrected for one of the magnifications and the definition sacrificed at the others; and its aperture is inversely proportional to the magnification. Thus an $f-6.5$ lens, with telephoto attachment, giving a magnification of four, works at $f-25$. The field of view also diminishes as the magnification increases. Generally, in a telephoto lens the definition is not quite so good as that of an anastigmat, and the definition of the variable type not so good as that of the fixed type. Furthermore, it is always a rather cumbersome instrument, and requires considerable care and judgment in its use.

It is noteworthy that with any of the above long-focus lenses, except the first kind, there is sure to be a little distortion. This is very often not serious, except in the case of some of the telephoto lenses, especially if used as a narrow-angle lens; it is probably least with the supplementary lenses.

In conclusion, we may thus summarize: If exacting conditions are required for the long-focus lens, it is best to buy another anastigmat. If a little distortion is not serious, and we don't mind the smaller aperture, the eight-lens convertible can be used. If the field of view can also be sacrificed—i.e., we are never using a larger plate than the smaller lens is used for—a six-lens convertible or a three-lens separable type with a supplementary lens will meet our requirements. If very great focal length is necessary, everything else must be sacrificed and a telephoto attachment used. If we still require a large aperture, then the fixed magnification telephoto is the lens.—*Amateur Photographer*.

Farmer's Reducer

The hypo-ferricyanide reducer, as everybody knows, very speedily loses its activity, and requires to be reinforced by addition of further ferricyanide. The matter cropped up at an R. P. S. discussion a little time ago, since when the chairman, John H. Gear, has made and published in the current *Photographic Journal* a series of tests. He has found that addition of four grains of potas-

sium bromide to one ounce of the mixed reducer prolongs the time during which the reducer keeps in working condition by about thirty per cent. Addition of the same quantity of manna was found to prolong the period of activity by fifty per cent whilst a time of useful action of more than double was secured by making up the reducer with addition of glucose in the proportion of five minims per ounce of the mixture. Mr. Gear states that by the use of a reducer made up with this small addition of glucose negatives of great density may be thinned without the solution losing its power before the operation is complete.—*British Journal of Photography*.

Enlargements From Motion Picture Negatives

A writer asks how enlargements can be best made from motion picture negatives; explaining that, as his lens does not give results of the proper quality he wishes to know what other form of objective should be used. The idea that the quality of an enlargement is, in some way, dependent upon quality of the lens, while a very common one, has no foundation, providing the quality of the lens is such as is found in the objective of the average camera. The image made in the enlargements will be identical with proper conditions as to relation of distance and lighting.

The reason that motion picture enlargements are so often disappointing is due to the fact that the picture seen at the motion picture show is made up, not of the projected image of a single impression, but of a number that the eye combines into one, with the result that deficiencies present in one negative are rectified by the light reflection from another. The only way in which an enlargement could be made from motion picture negatives so as to approximate what is seen on the screen, would be to have an arrangement whereby several of the negatives could be successively projected, each for a fractional part of the total exposure time, always taking care that the number dealt with did not involve violent movement. It should not be difficult to devise mechanical means of automatically effecting such a result, but one can be quite sure that no trick of lens, paper or exposure can give qualities that are not resident in the negative itself.

THE CAMERAMAN'S PAGE

Edited by Hal G. Hall, whose consideration of
new material of merit can be secured.

Errata

Last month's copy was hurriedly prepared, while travelling, and with no opportunity of seeing proof. Under the heading, "Speed and Distance", speaking of the speed of the image of a runner moving one-fourth the distance across the picture, we should have added "in one second". In the next sentence, "one-half second" should read, "two seconds", and, in the next following sentence, "one-eighth the width of screen" should read "one-twelfth the width, etc." On the next page the same article says, "three times the distance" when "one-third the distance" is the proper wording. In the future we will have an opportunity of seeing proofs and hope that errors due to our own rather hurried writing will be avoided. .

The Panoram

"Horrible examples" of "panning" are still rather prevalent, especially in the news films, in which a wide angle of view is shown by the use of the panoram. There is an old story of a farmer who went to the country fair. Before leaving the farm, he thus admonished his son: "Now, John, I don't want you to go to town. But if you do go to town, keep away from the fair. But, John, if you do go to town, and if you do go to the fair, keep away from the races. But, if you do go to the races, John, don't bet on the ponies. But, John, if you do bet on the ponies, put your money on Squire Perkins' old gray mare."

Don't use the panoram at all unless it is really necessary. But if it is necessary to panoram, by the shades of Daguerre, panoram slowly. There is nothing that looks worse on the screen than at too-rapid panoram,—unless, perhaps, it is a pirated Chaplin "dupe", abounding in granularity and lacking in gradation and definition. Roughly speaking, a panoram motion that covers the angle of view of the lens in less than ten seconds is fairly certain to result in that unpleasant lack of definition

that reminds one of skidding in an automobile at a forty-five mile clip. Obviously, however, there can be no arbitrary rule for panoram speed.

Departure from the practice of slow panning is permissible when the subject, the center of interest, moves rapidly across the scene. In such cases, fast panning serves the double purpose of keeping the subject well located in the composition, and preventing possible blurring of the rapidly moving image. Obviously, the closer the camera, the more rapid the required speed of the panoram to keep the subject in the same location within the limits of the picture. To accomplish this with a subject moving at a given speed, the required panoram speed must vary inversely as the distance between subject and camera. Thus, if a certain panoram speed keeps the subject centered at twenty feet, twice the panoram speed is required to keep it centered at ten feet. The reason, of course, being that the moving subject crosses the angle of view in half the time at ten feet as compared to the time required at twenty feet. However, in practice, it is usually desirable to have the subject move somewhat more slowly when close to camera. Otherwise, any prominent background objects will show this "skidding" effect to an unpleasant degree.

It is perhaps needless to mention that irregular panning, resulting in a series of lurches like unto those achieved, in starting, by the proud possessor of a new "road vermin". Uneven panning may be due to lack of practice, carelessness, or too stiff-working panoram mechanism. The remedy for the first two is obvious, while the latter should be guarded against when the tripod is bought, and prevented by giving it proper care. Caution should also be used, in buying, to make sure that there will be no danger of vibration when one comes to use the tilting head at an extreme angle.

Other conditions being the same, lenses

of different foci require different panoram speeds. The proper speed varies inversely as the focal length of the lens. Thus, with subject at a given distance from the camera, a three-inch lens requires but two-thirds and a six-inch lens but one-third the panoram speed necessary with a two-inch lens. That is, but two-thirds the number of turns of the panoram crank is required to move the camera through the angle of the three-inch lens as compared to the two-inch one, and but one-third the number of turns required for the angle of the two-inch lens covers that of the six-inch lens.

Of course, the same general principles apply in using the tilting tripod head as in the use of the panoram. Especially worthy of attention is the desirability of the subject's moving slowly, as when arising from a chair, while being followed by the vertical tilt, shooting rather close up.

Static Trouble

Static "preventatives" are legion. Among old acquaintances are the grounded tripod, the camera humidifier, metal brushes in the film magazines, camera heaters, camera coolers, rapid turning between scenes, the all-metal camera, the electric "discharger", and the metal crank handle. The latest is a "secret" attachment, devised by Ralph Radnor Earle, a San Franciscan. With this device, attached to a Pathé camera, the inventor has shot some fifty thousand feet of film. Although most of this was made in the higher mountains of Northern California, where static is usually prevalent, Mr. Earle assures us it was entirely absent. In the near future this latest static eliminator will be put on the market, the inventor going so far as to guaranteeing its effectiveness.

We, ourselves, have seldom been troubled with static since putting a metal crank handle on our own Pathé, though the brass handle may or may not have been responsible.

The Universal Camera

For a field camera to be used on "locations", the recently introduced "Universal" seems to offer considerable advantages, particularly in the matter of weight, size, and portability. We have not seen anything that seems so particularly well adapted to the needs of the news cameraman. The *Chicago Tribune* European war pictures were made

with this machine. While it is of but two hundred feet capacity and lacks some of the accessories sometimes required in studio work, its construction seems to be beyond criticism; and, being all metal, there is little likelihood of injury by dampness. The gears, being helical, backlash and lost motion is reduced to the minimum. Focussing is done either by scale or by a ground glass and magnifier, which, by means of a mirror, permits the image to be seen from the right hand side. Should one have occasion to make news weekly stuff for a company demanding at-the-hole frame line, a small set screw permits quick adjustment therefor. A Bausch & Lomb, two-inch f-3.5 lens is furnished as the regular equipment. The manufacturers, The Universal Camera Company, 24 North Wabash Avenue, Chicago, also supply a very light weight tripod having tilt, panoram and quick release, that sells for seventy-five dollars. The price of the camera is two hundred and fifty dollars.

A Low Priced Camera

When obtainable at all, Pathé cameras now sell without tripod, magazines, mats, light shade, and other necessary equipment, for five hundred and fifty dollars; the De Brie Parvo now sells for not a little more; while the price of the Bell & Howell still hovers around one thousand. Mr. Hegerich, San Francisco manager for G. Gennert Company, recently showed us a four hundred foot Ciné, fitted with a Carl Zeiss two-inch lens, selling for only two hundred and seventy-five. This machine is about the same size as a four-hundred foot Williamson; has automatic take-up working either way with friction clutch; there is a shutter dissolve, four contact mats are furnished, and the film runs on a metal race. Focussing is through a tube at the rear. This camera looks as if it were equal to any situation that the cameraman is liable to encounter, and is the lowest priced four-hundred foot instrument of which we have knowledge.

Removable Gauge

Under the heading "Motion Picture Photography", in the July issue of *The Camera*, Mr. Dench tells us how to make "trick effects". We wonder with what kind of a camera it is necessary to "remove the gauge", before exposing the wound-back film. The italics are our own.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Effect of Temperature

A correspondent in Iowa asks how much slower a plate or film is made by subjecting it to a freezing temperature, or rather, how much slower does it become when used at such low temperature. Some years ago there was, in some quarters, a belief that low degrees of temperature had a slowing effect upon plates and films, but this no doubt arose from the fact that working under winter conditions generally went hand in hand with somewhat less active development due to cold solutions, cold trays and cold plates. One of the greatest authorities on the subject of low temperatures and their influence, found, years ago, that sensitiveness of photographic emulsions are not affected by a decrease of temperature, even down to the point where air becomes liquid.

What Is Correct Exposure?

It would not be a very difficult matter to prove that there is really no such thing as an absolutely correct exposure; that is, for the average landscape view, or similar subject. Let us take one and investigate a little. In the foreground is a mass of trees or shrubbery, that, in order to get detail in the shadows, would require at least a full second. In other words, were we taking a portrait in this shade a full second would be required. Better lighted portions of the landscape require decreasing amounts of exposure until we come to the sky above which would be satisfactorily rendered with an exposure of a very small part of a second, say one-five-hundredths. What is the compromise exposure for the whole? It must lie somewhere between the first figure quoted, and the last, but just where does it lie? And that depends upon what the photographer wants most. He may be willing to sacrifice detail in his near shadows in order to get the distance well rendered, and he may feel that the distance is not important enough to justify the loss. Happily, the

latitude of the plate, combined with its tendency to "even up" matters, comes to our assistance. We can over expose this well lighted distance and yet it will come out quite presentable in the resultant negative, providing the developer has some of this fairly deep shadow in the foreground upon which to expend its energy. Consequently, the nearest approach to a correct exposure will be one that favors the shadows as much as possible at the expense of the better lighted portions, when the subject is one containing different planes having different exposure times. And if one doubts this tendency of the plate to "even up" in development, let him try a simple experiment. Make an exposure on a landscape such as I have tried to describe above, giving a good full exposure, one calculated for the shadows in the foreground, and then walk clear of this foreground and make an exposure of the same duration upon the distant landscape alone. One will find that the portion of the distant landscape shown as a part of the first picture will be quite well rendered while in the negative having no near objects with shade therein there will be every indication of flatness due to serious overexposure. With the distant landscape only, what we may call a bird's eye view, the proper exposure lies, not between that required for sky and for near shadow, but somewhere between that required for sky and for distant landscape, which obviously is a much shorter one. And not only must the exposure be not a little less but it must be somewhere between narrower limits; in other words, the latitude of exposure is much less. As a still more exacting example, take the copying of a line drawing. Here all the darks are of the same value and all the lights the same. The exposure for such a subject must be very exact, in fact, such a subject has no range of permissible exposures except the one afforded by the latitude of the plate, and of course such a subject can be said to have one absolutely correct exposure because

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the correct exposure for one part is the correct one for every other.

Trying To Be Exact

A recent visitor had a little story to tell that is worth repeating as it contains a hint worthy of attention. It seems that for some little time during his early experience as an amateur photographer he went to considerable trouble to measure out the chemicals called for by the various formulas he used. Another worker, a little further advanced, found occasion, one day, to show him the uselessness of this practice. He simply took our visitor's graduate, counterbalanced it on the scales, added four hundred and fifty-five grains to the counterbalance, and then poured in water until balance was again secured. The water necessary for this last was enough to reach decidedly higher than the ounce mark on the graduate. True, to have been exact the water should have been distilled, a certain temperature assured, and six-tenths of a grain more should have been used in placing the weights on the opposite pan, but the test showed conclusively that either the scales or the graduate was not correct, the latter being the most open to suspicion. One can appreciate the inconsistency of weighing out chemicals with a painstaking accuracy, simply to dump them into water measured in a graduate having at least ten per cent variation from correctness. The small inaccuracy of the average graduate does not matter particularly, although one will occasionally find one of the cheaper kind that is far enough wrong to make trouble when exactness is important.

The Long Focus Lens Better

One of our friends is a view photographer; and, in a recent conversation he made a point in favor of the long focus lens that we do not recall having heard before. He explained that, quite obviously, our mental impression of any given building or other view was really a composite made up of the image seen from a distance and seen from near at hand, including the intermediate distances as it was approached, if we really had gone close to it. Even when this last was the case the appearance from a distance, like all first impressions, was the strongest, but frequently our impression was not even colored by a near view because we had not gone near to the subject. For that

reason, the photograph, to most nearly satisfy our mind by its resemblance to the mental image, should be taken from as distant a point as could be managed without too much difficulty. Removing the camera did not suffice, as so doing simply resulted in a too small image of the main object, the house of our friend, for example. To overcome this, a long focus lens became advisable. This he always used in making such views, generally those of the homes of his patrons, making it his practice to use just as long a focus as the conditions permit. This he finds gives his customers more satisfaction than the too common practice of using a wide angle lens for all such work, regardless of the space available.

Trees Against The Sky

One of our correspondents sends us a few examples of his efforts at photographing some very picturesque trees, situated on an elevation that permits of only the sky as a background. He is unable to secure the detail and texture that he requires; in fact, his results are entirely too much in the nature of silhouettes. He asks as to the use of double coated plates and filters, explaining that he has used both, separately and in conjunction. Both of these last are a help but the right procedure is to await a day when the light is soft and diffused. Frequently one will find a day when clouds in the southeast or southwest will partially or almost completely cut off the direct rays from the sun in the morning or afternoon, as the case may be, while yet the light reaches and is reflected from the sky in the opposite quarter. Sometimes, in some localities, the quality of occasional fogs are such that quite pleasing effects can be secured. One's judgment of the probable results under haze or fog conditions should not be made too hastily unless one is well acquainted with the tendency of color filters to apparently cut out such influences. Should a distant landscape come behind the trunk or lower part of the tree, one will be surprised at the clearness of the view, as compared with its visual appearance, if an orthochromatic plate and color filter be used. Of course, one may wish to retain this effect of haze or other atmosphere in the distance and in that case the filter may perhaps be best left off. The tree itself, being so near, will show good detail in any case.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

The Best Picture

The prize of one year's subscription to CAMERA CRAFT, offered for the best picture in the last I. P. A. Circulating Album, gotten out by Mr. Gartner of Pasadena, California, was awarded to Wallace S. Allen of Denver. The album in question contained many fine pictures and Mr. Allen is to be congratulated upon his success. The task of the judges in deciding upon the best was not an easy one as the album contained several other very interesting sets of pictures. The reader can judge of the merit of Mr. Allen's work by the illustration used in connection with his article in our pages last month.

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Utah—John C. Swenson, A. B., Provo.

West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS.

4230—L. I. Moffett, Kiangyin, China.
Class 2.

4231—John A. Gray, Vesper, Or.
Class 3.

4232—J. H. Saunders, 2 Roger Place, Skinner Lane, Leeds, England. Class 2.

4233—Harold Sherer, R. F. D. No. 2, Osnaburg, Ohio.

3¼x5½, developing papers, of outdoor scenes, animals, general views, scenery, etc.; for

CAMERA CRAFT

good pictures of any kind. Post cards only. Class 1.

4234—Edward R. Oliver, Payson, Ariz.

5x7 and post cards developing papers, of mining, mountain scenery, natural bridges, etc.; for figures, nude and draped, foreign scenes, etc. Class 1.

4235—E. B. Kingsbury, 196 Greene St., New York, N. Y.

5x7, 6½x8½, 8x10, mostly 5x7, various papers, of specialty of nude, portraits in the gallery and in the field; for any of the above but prefer the nude. Studies made on glass are acceptable. Class 1.

RENEWALS.

1672—A. H. Fenn, 15 Colony St., Meriden, Conn.

Unmounted stereo views of natural scenery; for the same. Class 1.

3499—Max Gartner, 42 West Dayton St., Pasadena Cal.

5x7 and enlargements up to 18x20, various papers, of general scenery and residences; for any subjects just so the work is first class. First class work sent and same expected in return. Class 1.

4123—P. F. Scammon, 936 Standley St., Ukiah, Cal.

3¼x5½, 5x7, various papers, of local views and outdoor portraits; for outdoor portraits, views of general interest. Class 1.

CHANGES OF ADDRESS.

3133—A. E. Davies, 695 61st St., Oakland, Cal. (Was 891 55th St.)

3820—W. S. Cotton, care The Home Tel. & Tel. Co., Park & Burnside Sts., Portland, Or. (Was 6329 67th St. S. E.)

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Kansas City Camera Club

This enterprising club has sent out invitations for its Annual Outdoor Meet, to be held at the Swope Park Zoo, Sunday morning, August twenty-seventh. All are asked to be on hand promptly at nine o'clock, with their camera and their friends, and to be in the group picture that will be taken. Prizes are to be awarded to the club members making the best pictures, on that day, of the animals, the lagoon, or of the many beautiful woodland scenes that the park affords.

A Popular Exhibition

John Wanamaker, Philadelphia, announces an Exhibition intended to help and encourage the ambitious beginner, to be held at the Wanamaker Store, Philadelphia, November first to eighteenth, entries closing October twenty-first. This Exhibition is separate and distinct from the Annual March Exhibition of Pictorial Photographs held by the same store each spring. While artistic merit is not the main factor in this Exhibition, the intended competitor is advised to read over some of the many books on artistic composition to the end that proper arrangement of light and shadow and the central objects of a picture may be given consideration before the exposure is made. So doing will add to the interest of any picture as the reader can understand by bearing in mind that a

well-arranged picture will often attract when it would not otherwise do so, because it appeals to the artistic taste which we all have in us, a little more or less. Pictures sent for this competition should be addressed to the Camera Store, John Wanamaker, Philadelphia, and be delivered before October twenty-first. The Camera Store will furnish labels and folder offering suggestions as to the most suitable size of pictures and the prizes to be awarded.

Oregon Camera Club

This club, which seems to have taken a new measure of activity, announces an exhibition at the Portland Public Library, October fourth to eighth inclusive. While the exhibition will be held under the auspices of the Oregon Camera Club, the work of any Portland amateur, whether member or not, will be considered by the committee in charge. In the few weeks since the exhibition was decided upon, over two hundred prints from club members and nearly one hundred from non-members, have been pledged and additional pictures are being promised. The exhibition committee is composed of three veteran amateurs, whose efforts, coupled with the pictorial capability of a large number of the Portland workers, will, beyond a doubt, result in a most noteworthy display that will do much to again place the Oregon Camera Club in its former position before the public.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported By William Wolff

W. H. Parker of Salem visited Vancouver for his vacation.

H. C. Mackey of Medford closed his Studio during August to indulge in his annual recuperation.

E. D. Weston of Medford raises alfalfa on his ranch near Grants Pass.

H. Sackrider of Marysville spent a few weeks at Lake Tahoe recently.

A. C. Henline of Klamath Falls has added a framing department to his studio.

C. A. Miller, the big commercial man of the Klamath regions, gave the writer that long-promised auto ride during the latter's recent visit to the Falls.

Bill Richardson of the Northwestern Photo Supply Company has joined a new order.

H. G. Aylsworth returned recently from a trip East with Probus Products and reports business highly satisfactory.

Completed a Long Ride

Harold C. Campbell, of Boise, Idaho, reached this city Wednesday afternoon, having ridden practically all of the way on a bicycle. The distance is two thousand miles. He started May first and stopped over at many places en route. His actual riding time was about twenty-five days. He came by the way of Chicago and when he got as far as Kankakee his knees gave out and he had to come the rest of the way on the train. Mr. Campbell will enter the Illinois College of Photography for a complete course in the art.—*Effingham Democrat*.

"Win a Prize"

The above is the heading of an interesting circular gotten out by the Photo Chemical Company, of Chicago, a circular that our readers should not fail to secure. It explains the details of a contest that is on the broadest possible lines and one that has practically no restrictions, as the prizes will be awarded to the selections of the judges,

regardless of the brand of flash light powder used. By means of this wide-open contest this firm hopes to find among the prints submitted a generous number, made with their own exceptionally fast flash powders, that they can purchase for use in their various forms of advertising. As there are some seventy prizes besides the chance of selling any pictures suitable for advertising, the readers should at once secure one of these circulars, addressing, Photo Chemical Company, Lincoln Park Station, Chicago.

The McIntosh Line

Such of our readers as are interested in projection apparatus and lantern slides should send for the catalogue of the McIntosh Stereopticon Company, 472 Atlas Block, Chicago, Illinois. In addition to listing the excellent and extensive line of projecting apparatus manufactured by this firm, and including practically every form of projecting apparatus and accessories that one could desire, the booklet devotes some considerable space to a well illustrated explanation of the points involved and the application thereof in optical projection. The light, condensers, and objectives, and their arrangement for ordinary, opaque and vertical projection, are explained in a clear and comprehensive manner. In addition to this full line of projecting apparatus and accessories that the firm supplies, another booklet gives an almost endless list of lantern slides that can be purchased or rented as desired.

Willoughby's New Location

About November first, Charles G. Willoughby will remove to 110, 112 and 114 West Thirty-second Street, New York, the firm incorporating under the name of Willoughby Incorporated, and arrangements made whereby the employees will, to some extent, participate in the earnings. This location is an ideal one, being opposite Gimbel's Department Store and hardly more than a block from the new Pennsylvania ten million

dollar hotel now in course of construction. The Pennsylvania station within two blocks brings a small army of commuters from Long Island and New Jersey points, to the Metropolis each day, not to mention the visitors from all parts of the country. In addition the elevation station, the Hudson Tube, and site of the Subway Broadway station, are all within a stone's throw. The location is an exceptionally good one and Mr. Willoughby believes that the firm will have the largest and most exclusive down-to-date photographic stock house in this country.

The Improved Hichrome Process

As our readers know, the Hichrome process heretofore involved the use of a special camera, and the expense thereof has no doubt deterred many from gratifying their desire to investigate this most tempting color process. This drawback has now been eliminated, Mr. Ives having perfected his "Block Pack" that consists of a front special blue-sensitive plate, and intermediate green-sensitive film, and a rear special red-sensitive plate, all simply bound together at two edges. This "Hipack" forms a unit that is used in any ordinary camera, all that is required being a very slightly modified plate holder of the "book" type. As the plates are co-ordinated for color, no compensating filter is required on the lens and the one single exposure necessitates about the same time as does an Autochrome. This advance in the Hichrome process should be of the greatest interest to our readers, and we would suggest that they look up the announcement on another page and act on the suggestion that descriptive matter will be gladly sent upon request.

"Efficient Machinery"

There has just reached our desk a handsome little booklet bearing the above title, devoted to a brief description of the present Royle line of mechanical equipment for photo-engravers, electrotipers, printers and others. This well known line comprises machinery of the highest type for every kind and description of photo-engraving work, and the booklet to hand, despite its comprehensive character, is necessarily rather brief as to description. However it calls attention by numbers to special bulletins that are available for each machine. The real truth of the matter is that the Royle line is so

well and favorably known to every user of photo-engravers' machinery, that there is little occasion for us to comment upon its excellence. We can therefore do little more than suggest that this new booklet should be sent for by all interested in machinery and equipment of the kind. Copies will be gladly furnished upon application to John Royle & Sons, Paterson, New Jersey, as will also the special booklets covering the several machines described.

"Practical Studio Advertising"

The above is the title of a plain, eminently practical book that concerns itself with the right use of publicity by the photographer. In addition to the one hundred new and original advertisements that occupy much of the space, there are interspersed many effective plans and ideas that the photographer will find of value as means of increasing his business. The price of the book is two dollars and copies can be obtained through any dealer or direct from Abel's Publications, 917 Schofield Building, Cleveland, Ohio.

Kathol, An American Developer

Dr. C. J. Thatcher, who has studied chemistry in the German universities and who received his Ph.D. from the University of Leipsic in 1903, has, since shortly after the war broke out, interested himself in the production of a developer of such a character as to fill the requirements of photographers who had been using, quite universally, a certain imported one with which they were familiar and for which many of them had pet formulas that they were loath to deviate from. Back of his own efforts have been those of his assistants, other trained chemists like himself, all having full and expert appreciation of the photographic requirements and a knowledge of former discoveries and manufacture in that line. As a result, there has been, for nearly a year, in actual use and under the most exacting conditions, a product called Kathol, so closely resembling Metol, both chemically and photographically, that it is used without any change in proportions of the formula, in place of the latter, with the most gratifying results. As an example, we are told that the Lasky Feature Film Company, a concern that spares no expense to assure the perfection of their productions, commend it unqualifiedly, while, to turn to another exacting field, the Depart-

NOTES AND COMMENT

ment of Charities, New York City, uses it regularly for the development of the X-ray work of the city hospitals.

The difficulties attending the manufacture of this new developer have made it, until recently, hard to supply the growing demand. It has been necessary to invent and construct most of the apparatus employed, as it is not purchasable in this country. Now that the firm has this preparatory work well advanced, with production steadily increasing and extended use giving the product the seal of approval by uniform and unstinted commendation, the attention of the photographer at large is called to this new product. The present price of raw material is high, as with all chemicals, but as these prices should decline, the price of Kathol will do the same; and eventually, the manufacturers expect to sell their product at a price lower than that at which Metol can be imported. It is guaranteed to be a genuine, coal tar product, free from adulteration, having all the desirable qualities required in a developer for any and all purposes. Full particulars, formula sheets and prices can be obtained from the manufacturers, The Kathol Manufacturing Company, Incorporated, Riverdale Avenue and Two Hundred and Thirtieth Street, New York City.

The Auto-Fixt-Focus Camera

We again call the attention of our readers to the excellent little camera offered under this name by Herbert & Huesgen Company of 18 East Forty-second Street, New York. Look up their advertisement on another page; and, if that is not convincing and your dealer has not secured a supply, write for one of the descriptive booklets that the firm is sending out. This new camera is one that will please those looking for quality and design that will meet their requirements. Aside from its fine workmanship and high quality of material used, the principal feature of the improved design consists of the very simple mechanism which permits of the quickest possible setting of the focus before the camera is opened, the front automatically moving out to the desired point as the camera is opened, and there locking. Simplicity of manipulation characterizes this camera and to go into full details would require considerable space. The better plan is to get the information from the booklet mentioned, and these are gladly sent. We

have one of these cameras before us as we write and are anxious for a spare half day in order that we may take it out and give it a thorough trial, its handsome appearance and evident ease of working being most tempting.

New Formula For Kruxo Paper

This formula eliminates Metol entirely and gives a developer that works very satisfactorily and gives a tonè equal in every respect to the M. Q. Developer. This developer works a little slower than Metol, but there is some advantage in having a developer work slowly. Several prints can be developed at once, giving plenty of time to watch the prints and get the proper development. This developer has greater latitude than Metol, especially on underexposed prints.

FORMULA.

Sulphite of Soda.....	1 ounce
Carbonate of Soda.....	2 ounces
Hydroquinone .....	.80 grains
Water	20 ounces

From six to twelve drops of a saturated solution of bromide of potassium.

This developer should be kept at a temperature of at least seventy degrees, as hydroquinone is sluggish in action at a lower temperature.

Condenser Focal Lengths

An Illinois subscriber asks us as to the focus of a condenser lens suitable to enlarge from $2\frac{1}{4} \times 3\frac{1}{4}$ negatives. The focal length of a condenser is a somewhat unknown quantity and perhaps that is the reason it is not given in the catalogues. The diagonal of a plate of the size mentioned is nearly five and one-half inches so that one had best purchase a condenser of six inches diameter. The focus of this last will be approximately equal to the diameter and placing the light in the focus will mean that the distance between light and condenser will be about six inches. The negative should be as close to the condenser as possible and of course the distance to lens and from lens to easel will depend upon the focal length of the lens and the degree of enlargement. Assuming that the lens is five and one-half inches focus, a common one for cameras making $3\frac{1}{4} \times 4\frac{1}{4}$ negatives, the distance between negative and lens will vary from nine to five and five-eighths for same size up to four times enlargement and distance from lens to easel from nine to twenty-two and one-half

inches. This means that a distance of at least four feet should be provided if a lens of the given focus is used and four times enlargements are not to be exceeded.

Mounting Stereograms

A correspondent in New York has received a lot of stereoscopic prints that were sent him unmounted and unmarked as to right and left. Not only this but they were untrimmed. He wants to know how he may determine the proper position of the two making up each pair. Of course a trial in the stereoscope would determine, but all he has to do is to bear in mind that the right hand one should have the appearance of having been taken from a point somewhat to the right of the other. Consequently, foreground objects will appear as a little more to the left of more distant ones than they do in the other or left hand picture; and, of course, near objects in the latter will appear as more to the right of the same distant objects. The determination is so easy, after a little observation, that some old stereo workers do not go to the trouble of marking the two prints previous to mounting. As to trimming, the left hand picture should show a little more at the left end and the right hand one more at the right hand end, although the exact amount is not important, judging from samples we have seen from commercial workers.

A Busy Photographer

The last issue of *The Metropolitan Bulletin* contains, as a full page illustration, a reproduction of a very fine bird's eye view of Seattle. This picture was taken July twenty-ninth from the aeroplane of Lieutenant F. T. Maroney, by Frank Jacobs, the enterprising photographer of that city. Mr. Jacobs, during a recent baby contest held by the *Seattle Star*, photographed nine hundred and twenty-two babies in one day.

Illinois College of Photography

Joseph Hagans, of 1911, was married recently in Toledo, Ohio, where the bride and groom expect to make their future home.

The first tennis tournament of the season created much enthusiasm among the students and Faculty of the Colleges. In the final match, Professors Penrod and Dishinger proved themselves to be champions.

One of the engravers, L. T. Kellie, of Orangeville, Ontario, who left the College but a short time ago, has taken service with a division of the Canadian forces. His troop is now stationed in Hamilton, awaiting orders to depart for Egypt.

N. F. Latshaw, of Durand, Wisconsin, a brother of Professor R. J. Latshaw of the Retouching Department, is taking a course in photography in the Colleges.

One of the attractions of the Effingham Fourth of July celebration was a parade of automobiles decorated for the occasion. The students adopted a most novel plan of decorating their float, making use of great quantities of wild flowers.

George R. Meyer of New York City has returned to the Colleges for a course in engraving. He has recently been employed in Muncie, Indiana.

Joseph R. Bull of Pittsburg, Pennsylvania, who graduated in 1915, and Miss Margaret Austin of this city, were united in marriage Sunday, July sixteenth. Mr. Bull has been working in Pittsburg but in the near future will move to Iowa where he will follow his profession.

Superintendent Cook and family have returned from a pleasant auto tour. From Flint, Michigan, where they motored to visit Mr. Cook's mother, they went on to Cleveland to attend the National Convention. Mr. Cook reports seeing some very good exhibits by former students, and the I. C. P. represented by thirty-five people.

Professor Dishinger has, for some time, been ailing with "gasoline fever" and lately succumbed to the malady, purchasing a Dodge car. During his vacation, he and Mrs. Dishinger made a tour of over six hundred miles through Central and Southern Illinois, Eastern Missouri and Western Kentucky. Some seven of the Faculty will be owning automobiles before the season is over.

In going over the records of the College recently, it was found that, in the twenty-two years of its existence, students had been enrolled from sixty foreign states and countries. The sun never sets on students of the I. C. P. and B. C. P. E.

W. R. Vant, who attended the College in 1914-1915, after attending the National Convention at Cleveland, paid us a few days visit before returning to his home, Waukegan, Illinois, where he is one of the principal photographers.

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CALIFORNIA

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CAMERA CRAFT

A Photographic Monthly

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FOREIGN AGENTS:

Argentina	Juan Grant and Son, Buenos Aires
Australia	Harringtons, Ltd., Sydney
Canada	Kodak Australasia, Ltd., Sydney
England	United Photographic Stores, Ltd., Montreal
France	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
Mexico	Calpini y Cia., Mexico City
New Zealand	H. J. Jones & Co., Ltd., Wanganui
Philippine Islands	Squires, Bingham & Co., Manila
Japan	K. Kimbel, Yokohama

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and for our constantly adding
new ones.

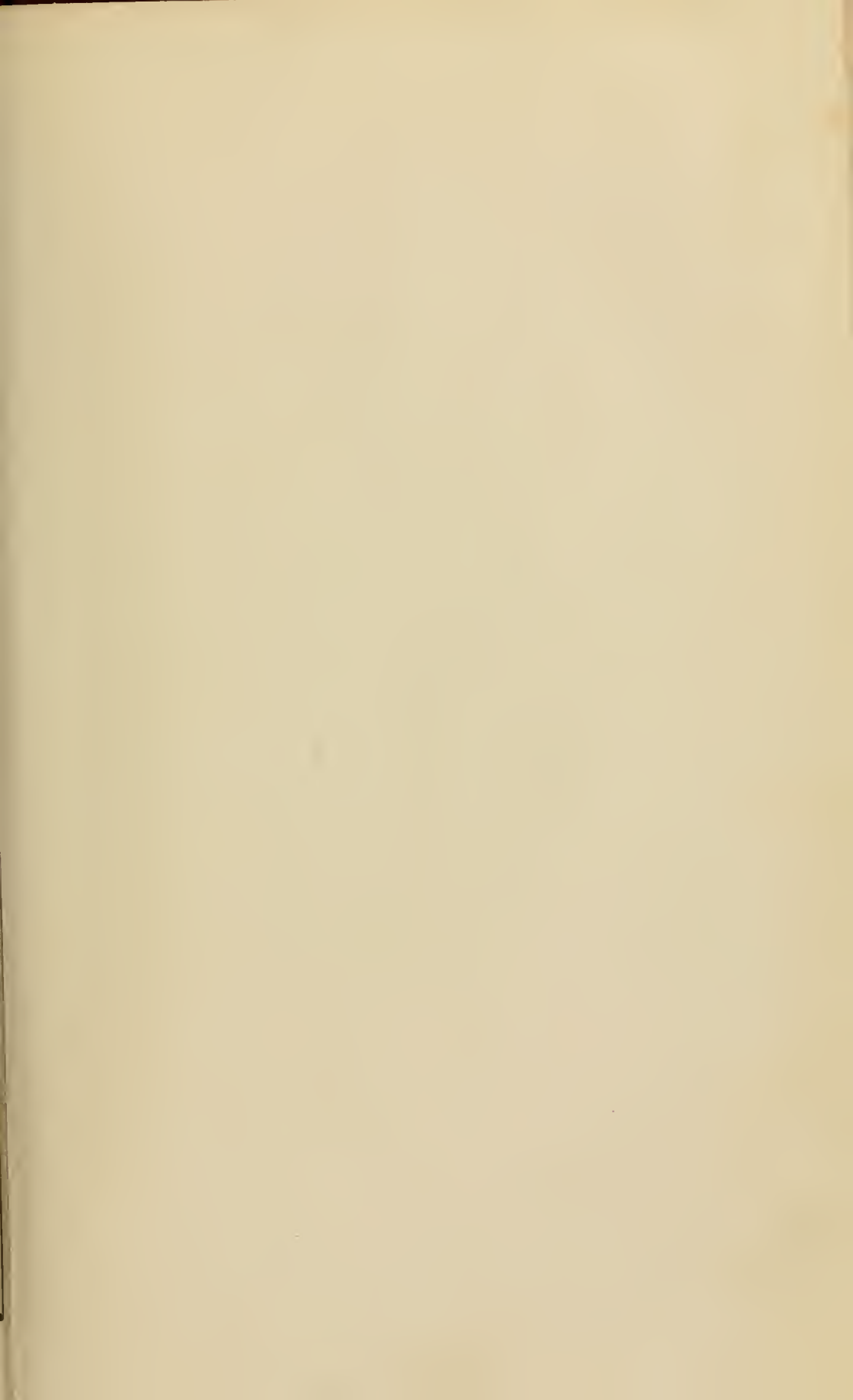
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A PORTRAIT OF INDIVIDUALITY
By THERON WENDELL KILMER, M. D.



CAMERA





CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

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OCTOBER, 1916

No. 10

Individuality In Portraiture

By Theron Wendell Kilmer, M. D.



With an Illustration by the Author

When one compares the photographic work of today with that of even ten years ago, one is struck by the vast change which has occurred during the past decade in the production of a portrait by photography. Formerly the sitter who had decided that it was best for him to have some photographs taken for friends and posterity, betook himself into the sanctity of his own boudoir and rigged up in the clothes which to his or her imagination best fitted the occasion. The next step in the operation was to call upon the local photographer at *your* convenience, tell him you had come to have your picture taken and proceed to wait until his holders were filled and his studio made presentable. Then with head-rest gripping your posterior occipital protuberance and a facial expression which was never your own, you faced the camera as you would face the death-chair. The results we all have seen and the less said about them and their perpetrators the better.

Now, how changed is the entire process. Portraits are made (by a few photographic portraitists), that really *look like* the sitter; there is the portrayed individuality of both sitter and artist. You all recognize a portrait by McDonald, Clark, Hoyt, Gerhard, Hollinger, Mix and many other noted photographic artists, for the simple reason that these workers have their product stamped with their own individuality. It is this feature towards which we must all work as it is not attained unless by work.

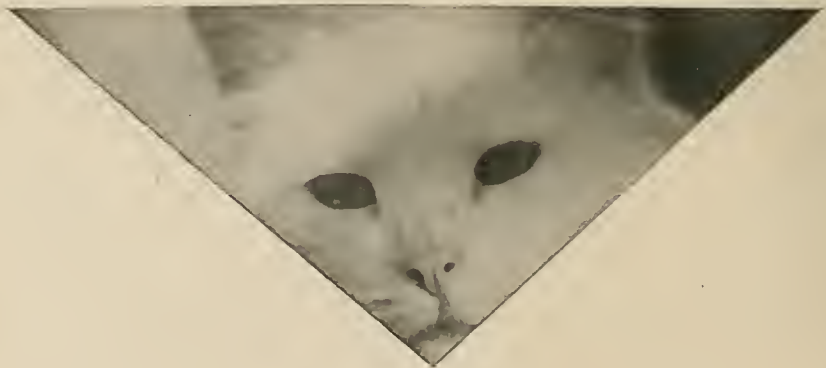
Do not try to copy the working methods of others; work out your own line of thought and technique. The man or woman whether professional or amateur who nowadays makes an exhibit worth while, has arrived at their

present position by dint of hard work; experimenting with light and shade, fussing with screens, lenses and diffusers until the object of their goal is reached.

The studio per se is no more. In its stead, a room plainly furnished, a rug or two, several three-panel screens of neutral colors, and illumination which is always the same day or night. Even this is not a formula for the production of photographic portraits having individuality, the portrait used as a frontispiece this month, one of my own productions as an amateur being an example to point. The negative was made on an 8x10 Stanley plate in an 11x14 camera equipped with an eighteen-inch Verito lens used at f-5.6, an exposure of eight seconds being given, the lighting being that of an ordinary window.

To return to the professional, an appointment is made by the sitter many days in advance of the first sitting, which oftentimes consists of only a chat for a few moments; thus the portrait-maker learns to know his subject. When the first photographic portraits are made, the sitter is invited to be seated in a comfortable chair or on a bench. The lighting has become second nature to the artist. The absence of everything studio-like is a great help in bringing out the individuality of the sitter as the sitting is really very little different from having a chat with a friend. I think it is a mistake to make too many plates of a sitter. If you feel that you have not made a successful plate out of six or eight exposures, try no more that day; but try, and try as hard as in you lies, to make a negative that *looks like* your sitter. It must have incorporated in it the individuality of both the sitter and yourself to be successful. Those who see it will be your best advertisers by realizing that here is a portrait, not only a mere photograph, but a likeness which portrays above all the individuality of the sitter.

A genuine love of nature in its broadest, deepest, highest development—a love which reaches with wide and eager vision and extended hands toward the stars above, and out upon the uttermost bounds of land and sea, wakening, vivifying, sharpening every sense, and enkindling in the heart a warmth of interest so genial and pervasive as to make one under its influence as a soul aroused to its real self from a vague, dull dream of being—a love of nature like this must inevitably start from some first point of individual contact. And the realm of birds is quite sufficient to meet the requirement.—AUGUSTUS WRIGHT BOMBERGER.



Making the Best of a Reflex

By H. D'Arcy Power, M. D.



With Illustrations by the Author



TELE-PHOTO RESULT — Building
one-third mile distant

THAT the Reflex camera is not in universal use, in place of being largely the property of the press photographer and the student of rapid motion, is due, in no small measure, to a lack of appreciation of its many advantages, and also, no doubt, to a few inherent defects that characterize it in the form most commonly met with on the American market.

Anyone pictorially inclined and seeking to make the most of his camera as a means of securing landscape pictures, has, in the Reflex, a means of making his selections of pleasing compositions that is infinitely superior to the unaided human eye. It might, at first thought, seem an absurdity to claim that subjects selected or arranged on the ground glass of the camera could be more suggestive to the artist's mind than those presented to the eye as it ranges freely over the landscape, but in very truth, such is the case, and for two very good reasons.

The worker who has, for any length of time, practiced pictorial photography, particularly in the field of landscapes, will have convinced himself that by far the most satisfactory pictures, those having the best arrangement of lines and most pleasing values, are usually of subjects located comparatively close to the camera, otherwise foreground subjects. And it is these foreground subjects that the average eye entirely overlooks. Our eyes are normally carried some five to six feet above the ground and naturally ranges over the intervening space to a point at least twenty—and often fifty feet, distant, all within that space being too often overlooked. Even when the artist directs his gaze to this nearer field, the mid-distance and the background passes out of focus and the image itself, formed of the combination of foreground and distance, is broken up and lost. It is therefore quite easy, in going out for a morning's walk, to pass over no small number of excellent subjects for photographic pictures, subjects which, had their image been viewed on the ground glass of the camera, would have immediately attracted the artist's attention. By affording us this advantage the Reflex camera makes a strong appeal. With it, the worker is not compelled to hold an unwieldy piece of apparatus before the eye in order to see the view as transmitted by the lens. With it, held in the hand or supported by a light

CAMERA CRAFT

strap passing around the back of the neck, the photographer, with one eye on the ground glass and the other observing what is going on about him, as it were, is always conscious of anything at hand of photographic interest.

Looking back over the photographic experience of more than twenty years, I can sharply divide it into the pre and post reflex periods. The first yielding me pictures obtained with much searching out at comparatively long intervals, while the second is giving me a wealth of negatives, the possibilities of which I have by no means fully utilized at the present time. So much for the importance of the Reflex camera to the pictorial worker, to the photographer of artistic tendencies. Now for a few words as to the possibilities of overcoming the few disadvantages under which the type most commonly used in America, namely the Auto-Graflex, labors.

To begin with, to fully realize the advantages of a Reflex camera, it should be carried so that the eye can, if desired, constantly observe the reflected image of the scene before it whilst the photographer is walking. This is generally achieved by holding the open camera in front of the body, but in so doing one is inconvenienced by the necessary occupation of both hands and the strain imposed by maintaining this constrained position of the arms while walking, particularly so if the distance covered be at all extended. The Reflex camera should always be suspended in front of the body at the exact position in which the eye naturally focusses the ground glass when viewed through the hood. European cameras are commonly provided with an arrangement for such suspension consisting of a band or strap passing around the back of the neck. My own early experiences were gained with an adaptation of this arrangement applied to my $3\frac{1}{2} \times 4\frac{1}{4}$ Graflex. While such a camera is not a discouragingly heavy implement when lifted from the table, its weight becomes of decided import when borne for hour upon hour on the ridge of one's cervical vertebra.

Necessity is, we are told, the mother of invention, and pain is credited with being a good stimulus. The two inspired me to devise a method of carrying the Reflex camera, one which is perfectly comfortable and entails very little trouble in arranging. This consists of a second pair of suspenders, that, instead of the front portion or ends terminating in the usual manner, have their ends supplied with metal loops such as are found on stocking supporters. Two small buttons, or better still, ordinary screw eyes, are fastened to the extreme back of the camera, and these two metal loops engaging them, the camera is securely held, yet capable of instantaneous detachment. These ends are scarcely visible, and when not in use are tucked inside the sleeves of one's waistcoat. Using this simple device one can carry the heavy Reflex a whole day with practically no discomfort or sense of weight. I have recently made what I think may be considered an improvement, one obviating a second pair of suspenders. By attaching a piece of wire to that part of the suspenders coming just inside the arm-holes of the waistcoat, leather thongs, ending in steel loops, can be fastened and the camera carried as in the first instance. So equipped one always has the means of carrying the camera without fatigue, and when not in use the leather thongs fall back into place beneath the waistcoat. This may seem a small matter, but in practice it means the saving of much discomfort,

MAKING THE BEST OF A REFLEX



EXAMPLES OF WORK WITH NORMAL LENS AND WITH EXTENSION TUBE PERMITTING USE OF BACK COMBINATION ALONE

more frequent use of the camera, freedom of the arms for focussing or other adjustments, and the camera always in position for immediate observation of the image. I prepared a drawing showing the camera suspended in proper position for instant use, with both hands free, by the simple expedient of inking in the outline of an out-door portrait of myself carrying my reflex, but the simplicity of the arrangement makes it unnecessary.

The second point in which the average Reflex camera is somewhat defective, is in a provision for changing the stops or diaphragm opening without too seriously interrupting the work in hand. When the change is made by turning the usual collar on the lens, difficulty arises as the lens is generally set so far within the hood of the camera as to be almost out of reach of the fingers, particularly if a color screen is being used. This defect can easily be overcome by boring a small hole in the collar that controls the iris diaphragm, inserting one end of a stiff copper wire therein, and bending the latter so as to come forward and turn up a little in advance of the edge of the front flange of the lens. This small turned up portion of the wire serves as a handle, easily accessible, for changing the size of the diaphragm.

A more serious disability that characterizes the usual form of Reflex is the lack of adequate bellows extension. This shortcoming is keenly felt in at least two frequently recurring situations. When one desires to make pictures of small objects the want of necessary extension preventing the bringing of the



VIEWS TAKEN FROM SAME POINT WITH NORMAL LENS AND WITH MINUS SPECTACLE LENS ADDED

CAMERA CRAFT



NEAR SUBJECT (TEN FEET), AND DISTANT LANDSCAPE MADE WITH TELE-PHOTO ARRANGEMENT DESCRIBED. NOTICE FINE DEFINITION IN BOTH

object nearer than four or five feet, is fatal to his success; at least when the camera is provided with only the average focal length of lens for the plate used. Also, if one desires to use the back combination alone, say the one of about eight-inch focus as on the $3\frac{1}{2} \times 4\frac{1}{4}$ Graflex, the possible extension is again inadequate and the ability, a most desirable one, to obtain a large image of a distant object, is denied.

There are two means by which this disability may be overcome. The simplest is to have made one or two brass rings, threaded at one end to screw into the lens flange and to take the lens at the other. I use three such rings that combined give me a two-inch extension; and, being made up of a one inch, a two-thirds and a one-third, any part can be used separately when lesser degrees of extension are desired, although most workers might perhaps be content with the one ring of two inches. With this, large pictures of small objects such as flowers, shells and the like, as well as large sized heads in portraiture, can be readily secured. The accompanying reproductions indicate the maximum size obtainable both with and without this simple adjunct. The ring will also give the necessary extension to permit the use of the eight-inch back lens.

A still more widely applicable means of utilizing the Reflex for distant views is provided by a tele-photo arrangement of the type that admits of one or two degrees of magnification without an additional camera extension. Dallmeyer supplies an adon of such a form, and the well known Cooke Telar also fulfils this requirement. However, these are somewhat expensive luxuries for occasional use and we can well avoid their expense by substituting a little trouble and ingenuity.

My Auto-Graflex is provided with a five-inch Protar lens; and, with a set of minus spectacle lenses from the optician's trial case, I sought experimentally for one that would give me, when placed at a reasonable distance behind the primary lens, an image of about three diameters magnification. I quickly found that a minus, seven dioptré spectacle lens, placed in a tube and located one and three-quarters inches behind the Protar, gave me a most satisfactory image. The several reproductions herewith will give some idea of the results secured. As can be seen, the definition over the whole field is all that could possibly

SIDESTEPPING WAR-TIMES CHEMICALS



SHOWING USE OF LENS ONLY, LENS AND NO. 7 PRISM, AND LENS AND NO. 15 PRISM, POSITION OF CAMERA UNCHANGED THROUGHOUT

be desired in landscape work; and, the reduction of illumination is almost negligible.

It would be possible, by a very slight change in the separation of these lens, to either increase or decrease the amount of magnification secured, the rule being that a decrease of the separation increases the size of the image; but, less than the distance given above necessitates a further extension of the bellows. However, the magnification afforded by the arrangement described is all that is required, and no additional bellows extension is necessary for objects as near as eight feet. Equipped with these utilities, my camera is capable of doing the most excellent work with the object as close as one foot, giving images one-half of the natural size; or, by substituting the tube carrying the minus lens for the extension tube, images of distant objects are secured as large as would be the case if photographed with a lens of twelve inches focus.

There is still another way in which the utility of the Reflex camera can be greatly increased, namely, by giving it the decentering capacity achieved in view cameras by the rising front. I find that by placing a prism before the lens it is possible to raise or lower the image a distance equal to from ten to twenty per cent of the total field, according to whether the prism be a number seven or one double that strength. When a very strong prism is used, some curvilinear distortion is apparent in the image, so that these last would probably be unsuited for buildings with sharply rectangular lines, but for other subjects and for minor degrees of displacement, the prism may be very useful. The comparative pictures reproduced herewith are examples in point.

The above describes a few of the ways in which the Reflex camera can be made a more universal instrument, one capable of fulfilling all the requirements that the average photographer is likely to demand of his camera.



Sidestepping War-Times Chemicals

By Theodore E. Peiser



Since the European war started, metol, ortol, amidol, rodinal, eikonogen and hydroquinone have raised high in price, some even becoming almost unobtainable, making it seem necessary for some one to produce a substitute to take their place. Charles Cooper and Company, manufacturing chemists of 194

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Worth Street, New York, in replying to a letter I wrote them some time ago, said that they had none of these one-time plentiful chemicals on hand, all of them being imported articles, which last we already knew. There is a little of these being made in this country, for which the manufacturers ask exorbitant prices. One inventor has promised a metal substitute "inside of thirty days," and samples that he has submitted have proven to be O. K., but the price will be about twenty-five dollars a pound.

Now, it seems to me that if some of the old-timers' formulas were to be again brought into use there might be less worryment over the high prices. Before me is a price list of Charles Cooper and Company, above mentioned, and for the benefit of the readers of CAMERA CRAFT I will give the prices per pound formerly quoted for the chemicals now impossible to obtain or costing their weight in gold on account of the European war: Amidol, ten dollars; eikonogen, three dollars and ninety-five cents; hydroquinone, one dollar and eighty-five cents; rodinal, two dollars. Quite a difference.

Suppose, Mr. Photographer, you try the following formula, used some thirty years ago, for an oxalate of potash developer for bromide paper, plates and films, as an experiment:

A: Oxalate of potash	½ pound
Hot water	48 ounces ,
Acetic acid	3 drams
B: Proto-sulphate of iron.....	1 pound
Hot water	32 ounces
Acetic or citric acid.....	½ dram
C: Bromide of potassium.....	1 ounce
Water	32 ounces

To develop, take of A, six ounces; B, one ounce; C, one-half dram.

In mixing the developer it is essential that the solution of iron be added to the oxalate, and not the reverse, or a thick yellow precipitate of ferrous oxalate will be formed. It is advisable to use distilled water for all solutions, or a precipitate of oxalate of lime will be formed, and the solution will be clouded, and both the oxalate and proto-sulphate solutions should be distinctly acid to blue litmus paper.

After developing bromide papers with ferrous oxalate, a clearing bath is necessary. This consists of:

Acetic acid	1 dram
Boiled water	32 ounces

After leaving the developer the prints are placed straight into the clearing bath, and from thence into another of the same strength; this stops development. When all the prints are developed, and have passed through the acid bath, they are washed and then fixed in the usual hypo bath.

While details may be simplified into unobtrusiveness, this should always be done with a close regard for values; in fact, it might be set down as an axiom that the more slightly details are treated, the more need is there that they should be right in value.—ANTONY GUEST.

Photographing Projectiles

By J. Alexander Wilson



With Illustrations by the Author



MY INITIAL ATTEMPT

ratus made since my leaving the Coast Artillery School.

In regard to the various stories that have appeared in other publications concerning the making of those photographs, such as "a special camera that

EVERAL magazines, both technical and photographic, have published a series of photographs as taken by the Instructor of Photography at the Coast Artillery School, Fort Monroe, Virginia, showing twelve-inch guns in action with gases around their muzzles and with the projectile in flight. Since some of the articles gave ludicrous, and all of them inaccurate and misleading, descriptions of the methods used in obtaining this series of photographs, the photographer who made the special apparatus required and who took the pictures will tell how the work was actually done. I will also show some later results obtained with an improved appa-



MORTAR IN ACTION—This series made with electrical release first described. Copyrighted 1912 by J. A. Wilson

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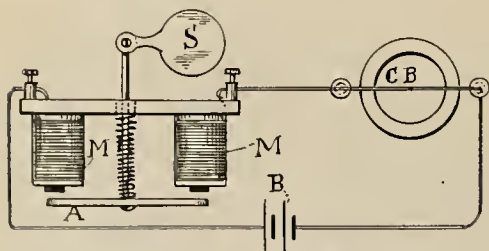
cost thousands of dollars", "a special shutter operated by an electric motor making several thousand revolutions per minute", "delicate wire screens placed in front of the muzzle of the gun" and "electric contacts placed inside the barrel of the gun", they are pure fiction, as no such devices were employed. The photographic apparatus and material used was as follows: An ordinary view camera, at first equipped with a Tessar lens of six inches focal length, working at f-6.3, and later with a Tessar of five and one-eighth inch focus working at f-4.5, both in a Multi-Speed Shutter. Lumiere Sigma plates were used and a developer as below:

A:	Water	40 ounces
	Metabisulphite of potassium.....	40 grains
	Pyro	1 ounce
	Metol	1 ounce
B:	Water	40 ounces
	Sulphite of soda, anhydrous.....	4 ounces
	Carbonate of soda, anhydrous.....	2 ounces
	Bromide potassium.....	5 grains

To use, take one ounce of A and B to eight ounces of water.

The first illustration herewith shows the result of my initial attempt at photographing projectiles and was taken without the assistance or cooperation of any officer connected with the artillery school. No electrical or other special apparatus whatever was used, the shutter being released by hand. From this and other pictures secured the same day, it was quite evident that some mechanical device was necessary in order that the shutter might be released at the proper instant, since the velocity of a projectile fired from a twelve-inch mortar is at least one thousand feet per second, releasing the shutter while the projectile is traveling the first twenty feet would have to be done within the limit of one-fiftieth of a second; and the muzzle velocity of the rifles being about twenty-three hundred feet per second, the difficulty would be still greater. The first electrical release used in connection with this work was a double pole electromagnet with the armature suspended from the shutter releasing lever so that the shutter would be operated when a current was passed through the magnet. This gave unsatisfactory results on account of the time required for the current to "arm" the magnet and because of the variable amount of distance

the releasing lever moved before shutter was set off. The shutter, a Multi-Speed, is one of the between lens type, and one can figure out its speed fairly closely upon the muzzle velocity of the projectiles and the small amount of blur shown. Attention is also called to the depth of field secured in all of the pictures with this



MY FIRST ELECTRICAL RELEASE
shutter and the lens working at full aperture.

The next device, my second electrical release, shown in the first diagram, gave, upon trial, somewhat better results. The electromagnet, M. M., was fas-

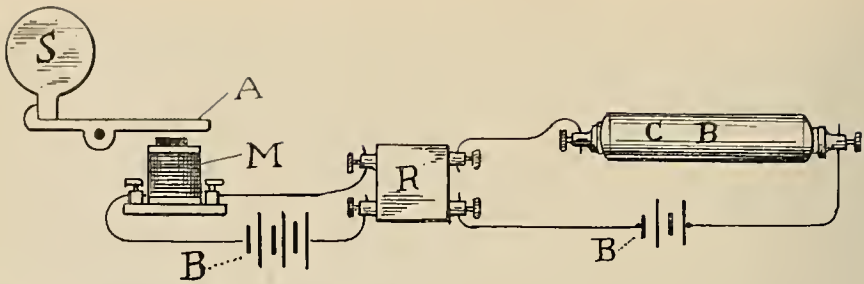
PHOTOGRAPHING PROJECTILES



FIELD GUN IN ACTION—Timing relay used. Copyrighted 1914 by J. A. Wilson



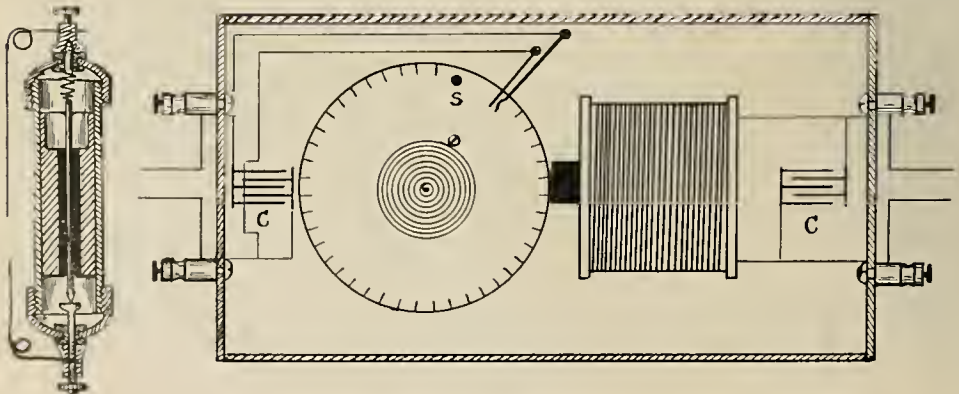
TWELVE-INCH RIFLE—Showing projectile having a muzzle velocity of two thousand two hundred and twenty-five feet per second. Copyrighted 1912 by J. A. Wilson



IMPROVED RELEASE WITH TIMING RELAY

tened below the shutter *S*, arm *A* being held in contact with the magnet against the pressure of a spiral spring, as shown. The circuit from battery *B* was completed through a wire circuit breaker *C. B.* fastened across the muzzle of the gun. When the projectile cut this wire, breaking the electrical circuit allowed the spring *C* to release the shutter. The illustration showing twelve-inch rifle is the best example obtained. The five photographs of mortars shown in the next illustration were taken with the same device used to operate the shutter. These mortars, having a different style of carriage, no difficulty was experienced in finding a place to attach a switch in such a manner that the recoil of the gun would open the circuit.

After leaving the Coast Artillery School I continued experimenting along these lines at Fort Winfield Scott, California; and, not having been able to secure the desired uniformity of results with any of my previous apparatus, including that described, a new instrument, one on an entirely different principle, was constructed. As shown in the second diagram, the shutter setting lever is engaged by a hook on the end of arm *A*, held in place by the magnet *M*. The circuit breaker, *C. B.*, operating by inertia, is bolted to the side of the gun or carriage, has a uniform action for all kinds of guns, breaking the circuit the instant the gun moves. This device consists of a tube about six inches long and seven-eighths inch in diameter, with a cap, provided with binding posts, at each end. The screws of these last extend through and are insulated from the caps and formed electric contact with the plunger which is slightly smaller than the diameter of the tube. At one end is a spring, just



CIRCUIT BREAKER AND TIMING RELAY IN DETAIL

PHOTOGRAPHING PROJECTILES



RIFLE IN ACTION—Series made with timing relay to show several stages of firing

strong enough to hold this plunger in contact with the other cap when the tube is in its normal horizontal position, the slightest jar or movement breaking the circuit. The sketch shows its construction fairly well.

Anyone trying this class of work will do well to provide himself with a few extra ground glasses in case of damage to the focussing screen by the concussion due to the gun firing. Too rigid a tripod will cause other troubles such as front board jumping out, plates falling forward into the camera and the like. One should use an old style folding tripod that will itself absorb most of the shock. However, a few glazier's points will prevent plates falling out and a little tightening up of the buttons will hold the front board in place, and these precautions should be observed. With some modifications that will naturally suggest themselves, this device could be used to photograph any



MORTAR IN ACTION—Made at three different times to test accuracy of timing relay

rapidly moving object that was required to be caught at a certain point in its travel. For example, an automobile moving at a high rate of speed in order to show the effect of the tire on the road bed.

In the circuit between the circuit breaker and the magnet controlling the shutter, is placed a relay, shown at R in the second diagram and in detail in the sketch herewith. The essential parts are a pivoted iron disk, a clock spring to actuate it when released, an electromagnet to hold it in any position set, and two condensers, shown at C C, one in each circuit. The iron disk revolves freely on the pin or axle, its edge just clearing the pole of the magnet. The clock spring is of such tension that it causes the disk, when released, to make a complete revolution in about one-twenty-fifth of a second. Therefore, as the circumference moves through five degrees of the circle, it delays or retards the break in the second or shutter circuit long enough to allow the projectile to travel about five or six inches, depending upon the muzzle velocity of the latter. With the circuit closed the disk is rotated backwards the desired number of degrees, where it is held by the magnet. When the circuit is broken by the jar of the gun, the magnet releases the disk and this latter turns ahead until the stop pin S strikes a spring contact and opens the other circuit to the shutter. By means of this relay the circuit through the shutter magnet may be broken at the same time the circuit breaker opens, or the action may be delayed a predetermined length of time ranging from nothing to about one-twenty-fifth of a second. With this device the picture of the field piece and the series following were obtained. To test the accuracy and uniformity of the timing of the relay, it was set in the same position on a mortar on three different occasions with the result shown in the series of three herewith. The varied amount of shutter delay necessary in securing the series of four gun pictures was achieved by allowing five degrees of gradation difference between each.

Desiring to give credit to all who were interested in or assisted in making these series of photographs, I should explain that only for the encouragement of Colonel I. N. Lewis, at that time Director of the Department of Enlisted Specialists of the Coast Artillery School, the first of the pictures shown, my initial attempt, would probably have been the last. Some ideas of his own and suggested improvements on mine were offered by Master Gunner Doan, C.A.C., while Captain F. J. Behr, Director of the School at the time the first series of mortar pictures were taken, rendered material assistance by removing obstacles, other than photographic, such as are often encountered in experimental work of this kind. Speaking for myself, figuratively: I have received great quantities of bouquets and also brickbats, but no one ever said: "Alexander, have one on me."

"Art," says Georges Sand, "aims not at the resemblance, but the expression." Nature is but the source of inspiration—art the result. Much that is in Nature must be suppressed in order to give emphasis to that which is expressive and pictorial, and this again must be kept in tone, so that the picture may be marked by individual refinement, harmony and reserve.—ANTONY GUEST.

A Wonderful Developing Formula

By Thomas Southworth



With Illustrations by the Author

Having just finished the development of a batch of 5x7 portrait films when CAMERA CRAFT came to hand this morning, the thought flashed through my mind that I might write something concerning these new films that would be of interest to a part of my fellow readers. However, I will concern myself, not so much with the good quality of the films as with the wonderful capabilities of the developing formula I was so fortunate as to secure quite early in my experience with the former. In fact, should our editor see fit to publish this I trust he will kindly head it "A Wonderful Developing Formula", for such I sincerely regard it.

Before going further I should explain why I am so grateful and so appreciative in this particular case. I have always felt that whenever a photographer finds something that fits his particular needs, it must surely be something that will be equally welcome to many others. In this instance I am confident that my own good fortune should greatly interest every photographer who appreciates a superior developer.



NATURALNESS SUCH AS THE STUDIO HARDLY PERMITS

CAMERA CRAFT

To explain, I have long regarded tray development as being antiquated, doubtless, because I have had considerable experience with the tank. Had I not had this last I would not be so pronounced in my views. I remember, some years ago, buying a card cutter at one of our conventions. While I had never felt any real necessity for such a device, I saw, or thought I saw, that it would be handy to have around. Now I have to smile when I think of trying to get along without one, despite the fact that I had been getting along without one for many years. I think the point is made.

In my short trips to neighboring towns, making home portraits, my practice is, and has been, to develop my plates in my room at the hotel, doing so after dark, this that I might show proofs and secure my orders without first making a trip back to my own dark room. To get, under these conditions, results such as I secured in my own and conveniently appointed dark-room, has been a matter of some concern, particularly as I have never felt willing to sacrifice quality for convenience. Quite naturally my principal concern was this matter of development. Metol-hydro has its own well known peculiar qualities and pyro has also its individual characteristics. Other single and combination coal tar developers are used, while metol-pyro has many admirers. However, the reader who will but go to the slight trouble of giving it a trial will agree with me that the formula herewith "beats 'em all".

Briefly, this developer has a number of marked advantages: It is non-staining, even after repeated use, it yields negatives that have the right gradations in printing density for any of the soft working papers. The negatives are neither blue-black as with metol-hydro, or brown-black as with the ordinary pyro formula, an intermediate color that prints neither harder or softer than it looks, being secured. Its keeping quality is remarkable for an all-pyro developer, for such it is. The formula reads as follows:

Pyro	567 grains
Sodium sulphite, dessicated.....	3155 grains
Sodium bisulphite.....	720 grains
Sodium carbonate, dessicated.....	960 grains
Potassium iodide.....	5 grains
Water to make.....	1 gallon

This formula gives what may be characterized as a "neutral sulphite" developer; and, as its keeping qualities are conditional upon its proper preparation, the following procedure must be strictly observed: First, thoroughly dissolve the sulphite in thirty-two ounces of hot, not boiling, water; then add the bisulphite and bring the solution to a boil, keeping it there for five minutes. When it has cooled down to about seventy degrees Fahrenheit, add the pyro. Dissolve the carbonate in sixteen ounces of warm water, add the iodide, and then pour both solutions into the tank and add water to one gallon. I use the sodas put up by the Eastman Kodak Company and other brands might require an increased amount.

Sixty-five degrees is the most satisfactory temperature for the developer, and, when first used, the developing time is about eighteen or twenty minutes.

After the developer has been used for several batches of film, a strengthening solution should be added for each new batch, or as needed to keep the

A WONDERFUL DEVELOPING FORMULA



A MOST ENJOYABLE TEA PARTY



WHILE REFRESHMENTS ARE BEING SERVED

CAMERA CRAFT

developer up to the desired strength. For this last, mix in the same manner, the following:

Pyro	120 grains
Sodium sulphite, dessicated	630 grains
Sodium bisulphite	150 grains
Sodium carbonate, dessicated	1490 grains
Potassium iodide	4 grains
Water, to make.....	60 ounces

It may be only a fancy, but it is one that I have clung to for many years, namely that a correctly exposed negative should not be allowed to remain in the developer after the highest lights make their appearance on the back of the plate. To continue development beyond this point destroys the relationship existing between the light tones. With development prolonged beyond this point the secondary high lights acquire the density of the first, and the so much desired gradation and separation of lights is destroyed. This theory, expounded by Felix Raymer in one of his articles printed some years ago, sounded logical. He explained that the highest lights could not continue to maintain their lead by building up right through the glass; and, even if they could, the resultant print would not show the added density. Someone might suggest that following this theory with over-exposed plates would result in a very flat image, and that only by continuing development after the high lights make their appearance on the back of plate can a satisfactory negative be secured, it being obvious that the highest lights may continue to build up even after they do show through the back. I will admit that such may be the case, but such negatives can never yield that quality of gradation that results from correct exposure and correct development. There are no prize winning convention pictures made for such negatives, as they do not possess those subtle qualities of light gradation that is demanded by the expert. I have made it a point to question a number of demonstrators who have visited me from time to time, asking: "Do the highest lights, after they appear on the back of the plate, maintain the same separation from the secondary lights when development is continued beyond that stage?" The variety of answers, none of which I care to quote, indicate that none of these men had any real convictions, one way or the other, and I have therefore clung to my original belief in the idea as expounded by Mr. Raymer.

But the reader will ask, "Why all this in connection with the giving of a developing formula?" Simply this: I want to explain why I do not think favorably of any developer that demands, in order to secure a negative of sufficient printing density to yield satisfactory results on soft working papers such as I use, that development be carried beyond that point where the more important highlights, usually the facial ones, appear on the back of the plate. Straight pyro is the only developer I know of that enables me to "live-up" to my theory. It may be contended by some that this pyro quality is one that is purely and simply a matter of stain, and that only in this regard does it differ from the coal tar developers. I do not think this is the case. I believe that the chemical process of silver reduction with pyro is one that yields a greater printing contrast, even where the use of a preservative prevents stain, than any other

A WONDERFUL DEVELOPING FORMULA



PLEASING AND INTERESTING HOME PORTRAITURE



MADE IN THE HOME WITH THE HOME ATMOSPHERE RETAINED

developing agent is capable of yielding. Possibly this is because it is less aggressive and the reduction is slower and more permanent; however, be it whatever it may, I have found it impossible to live up to my rule and secure sufficient printing density with any coal tar developers I have ever tried. Pyro gives me this.

It goes without saying that my rule could not be followed in using double coated plates, neither do I claim that it would be satisfactory in the hands of those using, perhaps, as a matter of economy, thinly coated plates. With these last, printing density is secured through the pyro stain, a stain that distributes itself, not uniformly through the film as one might imagine, but in proportion to the varying density of the different parts of the image. But where a plate having a liberal coating is used, and the tank method, with its many advantages herein outlined, is employed, there is no system of working that I have ever tried that appeals to me so strongly as does this combination. It might occur to some that this formula could perhaps be so modified as to yield the one remaining good point that it does not in its present proportions possess, namely, that of color. This I do not think can be done any more than I think it possible to control anything else requiring a preservative acting in such manner as to give only a definite amount of partial decomposition. I am now investigating along this line but do not expect to find such control possible.

When I designate this developer as "wonderful" I do not overrate it. Unlike all the others that I have tried, continued use, even to the point of almost complete exhaustion, does not give correctly timed negatives the appearance of having been undertimed. Isn't that something? With continued use, development merely slows up and reminds one to add a little of the strengthening solution. Development goes merrily on, no matter how large a batch of films or plates require attention; and, if correctly exposed, all will come out fine negatives. I have developed between thirteen and fourteen dozen 5x7 portrait films with one gallon of the developer and sixty ounces of the "Strengtheners", mixing and using the first thirty-three days ago. I have used it at various times since, added the "Strengtheners" from time to time as required, in developing the stated number of films. The last film developed, like the first one, leaves nothing further to be desired. After use I pour the solution back into a one-gallon jug and fill up to the cork with "Strengtheners" to exclude air. My method of adding strengthener has been merely to replace the consumed developer, neither more nor less.

Four dozen films were developed this morning, yet my fingers show absolutely no stain; however, I use a special film holder, a device of my own, that enables me to keep my hands almost entirely out of the solution. Using a tank without side grooves, of about the same size as the 5x7 provided by the Eastman Company, I can get fourteen of these holders in the tank at one time. The films remain in the holders throughout the fixing, washing and drying, as no part is made inaccessible as with spring clips. I may, on a later occasion, describe these holders more minutely in the event they do not make their appearance on the market.

For the special benefit of those who have not had extensive experience with tank development, and for those who have heard that the tank method for plates

A WONDERFUL DEVELOPING FORMULA



HER FAVORITE WINDOW SEAT

was a pretty good thing and one that they expect to "try out some day", I would urge that this "some day" be hastened along. The one advantage of complete temperature control will improve the output of any photographer. For plates, use the Core developing racks and tank supplied by the Eastman Company. These permit the advantages of tank development without sacrificing the advantage of individual inspection afforded by the tray method. While I have not tried this formula in other than portrait films, I am quite sure it will give equally satisfactory results on plates. However, some plates may require a little more or less carbonate, but, if one be interested he can take up that point with his demonstrator or plate manufacturer.

This formula was originally given me by Mr. Wills of the Eastman Company. I find that the firm has recently incorporated in its "Directions for Developing" furnished with each dozen of the portrait films. This, however, should not prevent my voicing my own satisfaction in its use or calling it to the attention of my fellow workers. In writing Mr. Wills, after trying this formula as furnished by him, I said that I considered it "one of the biggest little things I had run across in many years". Continued use of the formula strengthens my belief that I did not in the least overestimate its importance.

So the music of Nature will be heard through a quiet atmosphere. The light is, as always, the soul of the scene, the cause of color and the determining factor of tone, and should be the measure of everything comprised in the composition.—ANTONY GUEST.




THE BABY AND HIS LATEST TOY

By MRS. W. H. THORNE

Art and the Daily Life of Man

If you accept art, it must be a part of your daily lives, and the daily life of every man. It will be with us wherever we go, in the ancient city full of traditions of past time, in the newly cleared farm in America or the colonies, where no man has dwelt for traditions to gather round him; in the quiet countryside as in the busy town, no place shall be without it. You will have it with you in your sorrow as in your joy, in your work-a-day hours as in your leisure. It will be no respecter of persons, but be shared by gentle and simple, learned and unlearned, and be as a language that all can understand. It will not hinder any work that is necessary to the life of man at the best, but it will destroy all degrading toil, all enervating luxury, all foppish frivolity. It will be the deadly foe of ignorance, dishonesty and tyranny, and will foster good-will, fair dealing and confidence between man and man. It will teach you to respect the highest intellect with a manly reverence, but not to despise any man who does not pretend to be what he is not.—WILLIAM MORRIS.

You must look at pictures studiously, earnestly, honestly. It will take years before you come to a full appreciation of art, but when at last you have it, you will be possessed of one of the purest, loftiest, and most ennobling pleasures that the civilized world can offer you.—JOHN C. VAN DYKE.



Making Motion Picture Titles

By Frank B. Howe



In close alliance with the making of the action scenes of the motion picture is the making of that other important part of the film, the title and the explanatory captions that appear at the beginning and at intervals throughout its course, or, as they are technically known, the titles and subtitles. Distinguishing closely, the first are only those giving the title of the picture, the subtitles being the ones carrying the explanatory matter; but in actual practice the name title is made to apply to both.

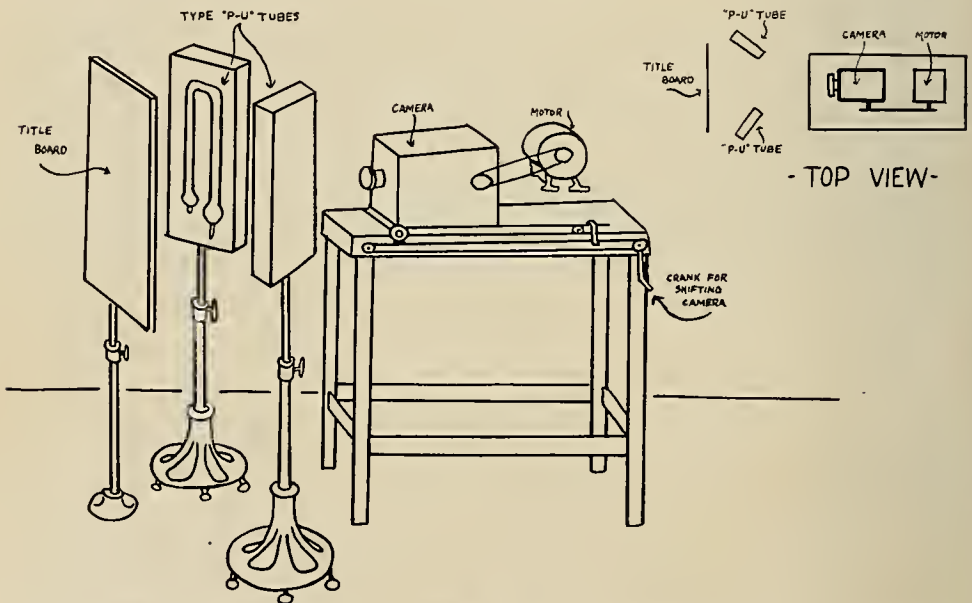
As titles are made with a view to having the finished product carry white letters on a black background, the simplest method of producing them is to letter the title on black cardboard with white paint. The cards generally used for this purpose vary in size from 5x7 to 14x17 inches, although they are usually about 10x12. Until recently these titles were always written by hand, like a show card, but of late it has become a frequent practice to produce them on an ordinary printing press, this latter method being cheaper and capable of more exactly formed letters; and, in this case, the cards are generally somewhat smaller than when written by hand. It is the custom in making subtitles that are merely explanatory; that is, those not quoting words spoken by one of the characters, to enclose the wording in a border incorporating the company's trade-mark. As it would be too much trouble and expense to reproduce this border for each title, one card, with its center cut out, carries the border, and the various cards carrying reading matter are placed behind this cut out portion and the two photographed together, giving the same effect as if the border had been printed on each title card. When the words of some character of the play are used, the wording only appears on the title. Recent developments in their design tend to make the titles more beautiful and as unobtrusive as possible; as, technically, the perfect picture should be without subtitles, though such perfection is not as yet practical. As inartistic subtitles tend to divert the mind from the story, it is most desirable that they be made as unobtrusive as possible; and, having them harmonize with the subject matter of the picture is also an advantage.

Titles, of course, must be made on motion picture film, just as are the various scenes, and each title must be a strip of sufficient length to keep the wording on the screen long enough to be read. The operator cannot stop the projector, allow the audience to read the title and then go on; he must run the title part of the film at the same rate as he does the scenes. The general rule is a foot of film to each word of the title, although this by no means holds in all cases, for the length of time required for an audience to read a title depends to no small extent upon the context. Briefly, a series of pictures all exactly alike, about sixteen to each foot of film, makes up the titles of a motion picture.

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The actual photographing of the titles, as with the scenes, is done both by daylight and by electric light, but the latter is coming into most general use and the time is apparently not far off when it only will be used. For photographing titles, a bench or table is arranged as shown in the sketch herewith. On this is placed the camera and the apparatus for moving it back and forth, and a motor, if such is to be used, for turning the camera. The camera crank is generally turned by hand, but some studios use the motor as it gives absolute uniformity of exposure. If the titles are to be made by daylight a small diffuser is suspended above the table. The board on which the card to be photographed is pinned, may either be on a separate stand, as shown in the illustration, or fastened to the end of the table.

For photographing titles by electric light, the Cooper Hewitt people supply a special tube, made in the shape of a U, mounted on an iron stand with a



LAYOUT FOR PHOTOGRAPHING TITLES, ETC.—With Cooper Hewitt Type “P-U” Lamps reflector and apparatus for adjusting. It is the practice to use a pair of these U shaped tubes, one on each side of the copy, as the illustration shows. These lamps are automatic in lighting and do not have to be tilted for starting. They will illuminate, absolutely evenly, copy from the smallest size used, about 5x7, to the largest or 14x17. The great advantage of this equipment lies in its perfectly even illumination of copy without the excessive glare and heat sometimes encountered in other systems, surely a most important point when the operator is working within a few feet of the lights.

The main requirement of a good title is contrast, and as there is no detail to be lost as in making ordinary scenes, a very strong degree of contrast is obtained. This is necessary in order that the letters will show up clear white and the background absolutely black on the screen; or, if the film is tinted, the letter showing the clear color of the tint with the background still a solid

PARAGRAPHS PHOTOGRAPHIC

black. Therefore, exposure and development are carried out with the idea of contrast in mind. The strips of title negative thus made are spliced in and becomes a part of the complete negative from which positives of the picture are printed.

This being the last of this series of articles, I wish to here express my most sincere and heartfelt thanks to all those who have so kindly assisted in their preparation, and particularly so to the following gentlemen who have done all in their power in the way of illustrations and suggestions for subject matter: Bennie Zeidman, Head Publicity Department, Fine Arts Studio, Los Angeles; Kenneth McGaffey, Publicity Director, Lasky Studio, Los Angeles; The Universal Film Manufacturing Company, New York; A. D. Childs, Cooper Hewitt Electric Company, Hoboken, New Jersey; John H. Kliegl, Universal Electric Stage Lighting Company, New York, and A. M. Klingman, General Electric Company, Cleveland, Ohio.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

A SMALL GRADUATE: I often want but an ounce or so of solution for the developing of a single plate. I find that an ordinary test tube makes an excellent graduate. One such, five-eighths of an inch in diameter, with four inches of water and half an inch of each of the three stock solutions of the pyro developer, gives me the solution required for a 4x5 plate. Your formula may be different and require other quantities but using a regular graduate the first time will establish the amount of space to fill thereafter. One can, if familiar with inch measurements, easily guess close enough for all practical purposes, or the side of the tube can be marked.—Lowe, Nebraska.

MEASURING DROPS: I use a ten per cent solution of bromide and find that two drops to the ounce of developer works well. I make up about half an ounce, put it into a one ounce red bottle, and in the cork I insert a metal piece such as are supplied on bottles whose contents are to be shaken into the hand. Mine has a screw cap, and, by turning the top of the bottle into the developer, the warmth of the hand held close about it warms the air inside and brings the drops directly and surely. It beats a medicine dropper.—Lowe, Nebraska.

INTERESTING THE KIDS: A few years ago I bought out a small studio in a country town and thought I would try and work up a little business by getting the interest and good will of the youngsters that seemed to be particularly numerous in that locality. I secured from a uniform tailor in the nearest large city, a conductor's cap, small size, with the lettering of the local road

thereon, and from a friendly railroad man the loan of an extra lantern of the typical conductor's ideal form with all its charm of shining nickel and colored globe. Placing the cap on the youngster's head, the lantern in the crook of one arm with the other hand raised, there was no difficulty in securing a good pose and the resultant pictures not only pleased the youngsters but drew orders from their parents as well. I feel quite sure that, had the town been more of a railroad one or a division terminal where the fathers themselves were mostly railroad men, quite a rich harvest could have been gathered.—W. E. R., Tennessee.

FLASH POWDER MEASURE: Take a 22 cartridge and have the town tinker solder it to the end of a short piece of wire, say five inches long. I have used one for nearly a year and find it a very handy and convenient measure. It will go to the bottom of a two ounce box of Victor powder. I do not know how much it holds, and do not care. I do know that two of the measures full is sufficient for a portrait at four feet, and three-quarters full is abundance for work at eighteen inches. If I am farther away I use three for a portrait. Who wants to monkey with scales when he is in a hurry, and this measure, being narrow and deep, is ideal.—Lowe, Nebraska.

A HELP IN TRIMMING: Take a piece of very heavy melton mount board somewhat smaller than the average run of one's prints and fasten a piece of one inch wood in the center for a handle, gluing a piece of felt on the under side to cover it. This, laid down on the print and used to turn the latter about, much as one uses the left hand for the same purpose when trimming, will be found a great convenience. It not only lessens the danger of soiling but it holds the print down flat and prevents uneven trimming due to bulging or buckling of the edge of the cutter blade is brought down.—Thomas Southworth, Indiana.

A TALL TRIPOD: "You make pictures, don't you?" "Yes sir, and good ones." "I wish you could come and photograph some of my stock. George made me some, but they are not right." This same George is a poor little fellow who, for some reason, never got more than about forty inches growth; he sees things from below and that is what caused the trouble with the pictures. I took three long strips, window parting they call it, costing about three-quarters of a cent a foot at the lumber yard, bored holes through from the narrow side, a quarter of an inch from one end of each, then ripped them through on the broad side for a distance of two and a half feet. To use, take the tripod head and slip the pins into the holes by spreading apart the ripped ends of the strips, putting a short piece of stick in each to keep them spread and in place. Trying this you will be surprised to see how much steadier such a tripod is than the usual one. The advantage lies in the high view obtained of the subject, like that of the direct view finder; and then, it is more convenient and graceful to work in an erect position than it is to make a six foot man fit a four and a half foot tripod. If a man's legs were adjustable, like the tripod's, this last would be easy, but under the circumstances it is better to make the tripod's legs longer.—Lowe, Nebraska.

The more things thou learnest to know and to enjoy, the more complete and full will be for thee the delight of living.—PLATEN.

CAMERA CRAFT

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No. 10

Fifth California Camera Club Salon

The California Camera Club will hold its Fifth Annual Photographic Salon, the first since the fire of 1906, in the galleries of the Palace Hotel, San Francisco, November twenty-first to December second, inclusive.

It is the aim of this Salon to exhibit only such pictures as measure up to the highest standard of artistic expression and show mastery in execution. All pictures submitted will be judged according to these standards by a jury of selection composed of leading artists. All pictures submitted must be mounted but not framed, minimum size of such mounts being 20x25 inches, and bear on their backs the name and address of the maker, the number and title, and the price, if any. All pictures must be addressed: Fifth International Photographic Salon, California Camera Club, 833 Market Street, San Francisco, and be sent to arrive on or before November fourth. An entry form, obtainable by addressing the secretary of the California Camera Club at the address given above, should be filled out and sent in together with the entry and packing fee of seventy-five cents, this last covering any number of pictures submitted by one exhibitor. It is hoped that those of our readers doing pictorial work will at once send for entry form and prepare to submit their work, as the indications point to a most successful Salon and one in which it will be well worth while to be represented.

Are We All Wrong?

In a letter brought forth by our comment on the Cleveland Convention last month, Secretary Hoffman affirms that the attendance was not a disappointment in spite of any criticism to the contrary. Of course, much depends upon who makes the statement and what his expectations were. Mr. Hoffman may not have anticipated a large attendance and consequently no disappointment resulted, just as he claims. However, quoting from the last issue, just to hand, of *The Ohio Photo News*, a publication issued from the city in which the convention was held: "Everyone was surprised at the very few photographers who were from a distance. It seemed almost a local affair." And this is not the only photographic publication that we could quote in kind.

But, in explaining the reason for the Association's own publication, Mr. Hoffman adds: "It is true that the photographic press was always ready to give publicity, but they were just as apt to give adverse criticism, as they were to give favorable criticism, and the Association had no weapon with which to defend itself." This gives us a new point of view. Is the photographic press all wrong in assuming as its right or privilege the making of adverse as well as favorable criticism of the Association or its activities? I am quite sure that our readers would not deny us the privilege and I believe that my brother

editors do not feel that in exercising the privilege they are doing more than fulfilling their obligations to their readers. Has the photographic press been unfair to the extent that the Association must arm itself with a weapon of defense? If not, should fair criticism, even if adverse, justify a weapon with which the Association might defend either itself or its acts? Is our occasional adverse criticism of some detail of the Association's activities to result only in armament for defense rather than an effort to remove or remedy the defect? Must the photographic press offer only favorable comment or else refrain from speaking? In brief, are we of the photographic press all wrong?

Our Farm Paper Cover Competition

The past month we have written over thirty long letters, in most cases offering suggestions based on prints sent us along with the requests for information, and this convinces us that while a part of our readers are interested in the making of pictures suitable for farm paper cover illustrations they are not particularly attracted by the competition. Our competition, as we have repeatedly stated, was intended to assist those who might be interested in a line of work that promised a definite aim and remuneration for successful pictures. The interest has been shown and it will be our aim to assist those interested as far as we can. To this end we would suggest that the reader send us such pictures as he may make along this line and ask us for criticism thereon. In this way we can help as we wish to do.

James H. Smith On The Coast

This time Mr. Smith is giving himself something in the nature of a pleasure tour combined with the regular business trip to the Coast. He reports business exceptionally good in the line manufactured by the James H. Smith & Sons Company, the magnesium powders and other ingredients of the well known "Victor" flash powder being obtainable in sufficient quantities for all needs, although at a decided advance in price. Always a welcome visitor, we are pleased to have Mr. Smith avail himself of the many pleasant side trips this Coast affords and we feel sure they will but intensify his desire to visit this territory more frequently.



A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Photographing Paintings

D. Cameron-Swan, F.S.A. Scot., gave an excellent and practical lecture at the Royal Photographic Society at the last meeting of the session on a subject which he has made peculiarly his own, that of photographing paintings. Mr. Cameron-Swan said that as to apparatus a very rigid camera and a good rectilinear lens were essentials. In his own work he had gone so far as to design and use a camera with its body permanently fixed and dovetailed to the baseboard, and a very long bearing for the sliding part of the lens front-board. A square-body camera was advisable, so fitted that the position of the dark slide could quickly be changed from the horizontal to the vertical and vice versa. A frame should be fitted inside the camera immediately behind the lens, to take glass color filters, which should be held firmly in the grooves of the frame by means of springs. A rigid camera stand, with a hinged top-board and a steady easel, practically completed the necessary apparatus.

Coming to technique, Mr. Cameron-Swan advised that wherever possible a margin of about an inch should be allowed on each side of the plate, beyond the actual space occupied by the image of the painting; many an otherwise good negative had been spoilt for lack of this simple precaution. Direct sunlight was unrivalled as the source of illumination for most oil paintings, having drawbacks, however, in its variability of intensity and in the difficulty in securing its direction at the proper angle on the surface of the painting. Diffused daylight was often of value; while electric light had the advantage of affording a constant factor, both as regards color and intensity of illumination. For utilizing the sun's rays in photographing oil paintings in the studio, it was necessary to have a turntable, with the platform carrying the camera mounted on a pivot from which a beam or girder was extended, at the other extremity of which was fixed the easel to support the painting. By this means, which

Mr. Cameron-Swan described in detail, it was possible to allow the sun's rays to fall on the painting at any angle. Generally speaking, the most suitable effect was given by an angle of from thirty to forty-five degrees from the line passing through the lens to the picture.

In dealing with the photographing of paintings which could not be brought to the studio, Mr. Cameron-Swan indulged in many reminiscences, including the manner in which he photographed Millais's portrait of Gladstone for Lord Roseberry at his house in Berkeley Square.

As to diffused daylight, Mr. Cameron-Swan suggested that the studio for picture work by this medium should have frosted glass roof and sides, or white sliding blinds which might be spread out to cover the whole of the glass or a part of it. For large negatives, up to three or four feet in length, a convenient arrangement was to use one end of the studio as the camera by erecting a brick or wooden partition across it with a hole in it for the lens, and a vertical easel on four wheels running on rails away from the lens, on which easel the dry-plate is fixed. It was advisable to have double doors fitted in such a camera room, so that the operator could leave his place within the camera room during the exposure if necessary. Mr. Cameron-Swan added that the charm of the colored image on the ground-glass screen of the ordinary camera was not to be compared with the charm of seeing the image on the surface of the dry plate during exposure, and realizing the wonderful chemical changes that were taking place on the film under one's eyes.

Remembering that an oil painting has a surface covered with varnish, Mr. Cameron-Swan suggested that it would be well to consider it, so far as its reflecting properties go, as a mirror, and he went on to put forward certain practical considerations, including the necessity of having a black velvet screen on each side of the camera with the

lens poking through the center of it, and he showed that in order to prevent reflections from the surface of the painting the screen must be of twice the linear dimensions of the picture to be copied.

As to cases in which the electric light is the illuminant, Mr. Cameron-Swan said that he had devised an arrangement which had been used with success for illuminating small oil paintings for which daylight was not available. Two rows of incandescent carbon-filament lamps mounted about four inches apart, backed by semi-circular troughs lined with asbestos card as reflectors, were mounted one on each side of the easel or copy board on movable brackets. When the current was adjusted so that the filaments of the lamps were considerably below their normal brightness, and the angular distance from them to the picture fixed, so that evenness of illumination was obtained, and no reflections from the lamps were seen, this system enabled one to dispense with color filters in most cases, and gave one an absolutely uniform source of light and a wonderfully even illumination of the picture. Mr. Cameron-Swan said in closing that he had always felt it a privilege to reproduce works of art, both an education and a delight, especially when one was brought into touch with the painter. It helped one to feel the motive underlying the paint.

An interesting discussion followed.

The Chairman said he was in agreement with the lecturer in judging exposures without the use of an actinometer. He never used one. At the same time he did not agree with the lecturer's practice of basing his judgment of exposure on the luminosity of the image on the focussing screen.

Olaf Bloch raised the question of reproducing contrasting colors which, visually, were almost of the same intensity and, with theoretically perfect color-translation into monochrome, would not differ in the copy. He asked how the lecturer dealt with such cases.

Mr. Cameron-Swan replied that it was open for the photographer to consult the painter, although his experience had been that painters could not afford any help in the way of telling the copyist which of two such colors should be the lighter or darker. He thought the best plan was to submit a proof and to amend the result by means of

matte varnish or mineral paper on the negative.

J. C. Warburg asked what plan the lecturer followed in approaching such subjects. Did he decide beforehand, or did he employ a different filter as the result of a first trial?

The lecturer said he made up his mind from the character of the painting which color he would reproduce as darker than the other, though he admitted that in many cases it was a very difficult problem. He often employed special red filters, which had been prepared for him by Mr. Ives.

Mr. Lambert said he thought there might be a number of monochrome versions of the painting, just as there were many translations of the Latin or Greek poets, which could be accepted without saying that one was right and another wrong.

Mr. McIntosh, referring to the avoidance of reflection effect, mentioned that the defect was largely avoided by the use of a red-sensitive plate and a deep light filter, even in the case of subjects without positive color. —*Amateur Photographer.*

Ammonium Perchlorate In Flashlight Powders

One of the regrettable consequences of the present war is the almost complete suspension, in nearly all European countries, of experimental work; and, in no field is this more deplorable than in that of photography. The two years during which this condition has maintained has been almost barren of new discoveries and we therefore rejoice at finding Professor Namias breaking the silence with a paper on the use of ammonium perchlorate as an oxidizer in flashlight powders having a magnesium base. The following is a rather free translation from *Il Progresso Fotografico* of Milan.

Continuing our researches, commenced some years ago, on the characteristics of the oxidizers that are or might be used in the making of flashlight powders, ammonium perchlorate, which we believe has not heretofore been advised, was taken under examination. This ammonium salt resembles, in chemical constitution, the potassium salt, being represented by the formula $(H.N) ClO_4$; both are stable and both require high temperatures to act as oxidizers; in fact, ammonium perchlorate has recently been employed in the manufacture of certain explosives.

A PHOTOGRAPHIC DIGEST

My investigation of the possibilities of this ammonium salt as a substitute for the potassium perchlorate as an oxidizer in flashlight powders, was prompted by the consideration that, as it does not contain a fixed base, its use should result in less smoke and noise.

The experiments made have shown that when ammonium perchlorate is used with magnesium it forms a flash powder having quite different properties than those of the potassium perchlorate mixture. Whilst the latter burns with extreme rapidity and furnishes a more instantaneous light than does any other mixture, a powder made with ammonium perchlorate burns quite slowly, so slowly, in fact, that one might describe it as a flashlight for time exposures, meaning thereby that it has an obvious duration. Besides this diversity in the duration of the combustion period, a not less important property lies in the greater actinic of the light produced, it being much more actinic than that given by the potassium salt. Furthermore, as we foresaw, there is produced only the smallest amount of smoke and detonation.

The proportion of ammonium perchlorate best used is the same as with the potassium salt, namely, one part to each two parts of powdered magnesium. The diverse comportment of the ammonium perchlorate should no doubt be attributed to its greatest oxidizing ability. One can hardly attribute it to a smaller proportion of oxygen because ammonium perchlorate contains a slightly greater percentage than does the potassium perchlorate. As to the greater actinic of the light, this is to be attributed to the greater transparency of the products of combustion and to a consequent less absorption of the active rays thereby. Inasmuch as the sum of the actinic rays furnished by the ammonium perchlorate mixture is larger, so their production also takes a much longer time; consequently, if the powder be used in such a way that the shutter is open but for an instant during the flash, the quantity of light made available may be insufficient to produce a negative, even with extra rapid plates.

For these reasons the flashlight powder obtained with potassium perchlorate merits the preference over others, even those with a base of thorium nitrate which is usually considered amongst the best. Even if the flashlight powder is utilized in an apparatus

without a shutter combination, the potassium perchlorate mixture is again better suited as it alone burns with sufficient celerity to avoid defects of movement, especially of the eyes.

In no case have we been able to produce satisfactory portrait negatives with flashlight powders containing ammonium perchlorate. On the other hand, such a powder is particularly indicated where inanimate objects such as statues, buildings, and the like are to be photographed. In fact, the greater actinic of the ammonium perchlorate mixture permits it to be employed in smaller quantities and with much less smoke and noise. Above all, it is particularly useful in the making of autochromes by flashlight for the reproduction of pictures and paintings. The quantity required is smaller than in the case of potassium salt, about four grammes being usually sufficient.

The light filter to be used in connection with autochromes needs to be slightly different from that employed with the potassium perchlorate powder. Since the reproduction, by means of autochromes, of pictures existing in galleries and museums is destined to experience a large measure of development, we believe it quite important that the advantage of employing this ammonium perchlorate and magnesium flashlight powder be presented. Let us add that, in the matter of security, the employment of ammonium perchlorate does not differ from that of potassium perchlorate. Furthermore, both of these oxidizers are preferable to mixtures of nitrate, and particularly to nitrates of thorium and cadmium, which last are liable to spontaneous explosion.

To Blacken Aluminum Cameras

The employment of aluminium in the construction of cameras and other photographic apparatus is steadily on the increase, and it may be of service to workers, both amateur and professional, to know how to blacken or re-blacken this metal should such an operation become necessary at any time. The article to be treated should first be thoroughly cleaned with fine emery powder, well washed to remove all dust or grease, and then immersed for twenty-four hours in a saturated solution of chloride of zinc. This can be made by dissolving clean scrap zinc sheet in muriatic acid; add to this ten to twelve parts of hot water, and to the result-

ing solution a small quantity of sulphate of copper, in the proportion of one ounce to a gallon of solution, and a few drops of clear muriatic acid. When dry the black surface is liable to damage, and can be removed by rubbing, but to ensure its permanence it is only necessary to lacquer the articles by dipping in the usual way. Another method is to immerse the aluminium, after cleaning and washing as already described, in a solution of—

Ferrous sulphate	½ ounce
White arsenic	½ ounce
Hydrochloric acid.....	6 ounces
Mix and dissolve these ingredients, and add	
Water	6 ounces

Keep the articles immersed until the desired color is reached, then dry off carefully by the use of fine sawdust, and lacquer. All reasonable precautions must be observed in compounding and using either of the baths above described on account of the poisonous nature of most of the constituents.—F. H. B. S. in *Amateur Photography*.

Light-Transmission Through Lenses

The following is an abstract of a recent paper by M. Kollmorgen in the transactions of the Illuminating Engineering Society: As is generally known, the amount of light-energy which falls upon a glass surface is divided into two parts—a smaller one which is reflected back into the original medium, and a larger one which continues into the glass and is refracted in it, and in a telescope forms an image. The relative amounts of these two quantities for vertical incidence can be readily computed in terms of the refracted indices of the media beyond and before the surface of incidence. The amount of light transmitted through each element of an optical instrument may be between eighty-five and ninety-five per cent of the available total. Hence the efficiency in an optical instrument having a considerable number of elements, measured by the continued product of the efficiency of each component, may be objectionably low. For example, in a modern periscope gun-sight the efficiency of light-transmission is thirty-six and two-tenths per cent, and this figure is reduced to thirty-two and one-half per cent by absorption of the combined thickness of prisms and lenses. In some modern periscopes for submarines barely twenty per

cent of the available light reaches the observer.

It would thus be a desirable thing if it were possible to treat the glass surfaces in such a way as to reduce reflection. It has been known for some time that it is possible to increase the reflecting power of a surface. Professor Wood, of Johns Hopkins University, some years ago made the remarkable discovery that by coating a glass surface with a thin solution of collodion a degree of reflection could be obtained quite out of proportion to the refractive indices of either the glass or the collodion itself. For optical work, however, just the opposite is desired, and, as very often is the case, chance has given us a hint which has already produced very desirable results. In 1904, H. Dennis Taylor, the well-known English lens expert and designer of the Cooke lens, saw a very badly oxidized photographic lens which had been returned to be repolished. Possibly just to find how much light was lost through this oxidation, he exposed two plates under identical conditions, one through a perfectly new, untarnished lens, the other the badly-oxidized specimen. To his great surprise he found that the plate taken with the badly tarnished lens had received considerably more light than that taken with the new lens, and, acting upon this hint, he sought means of oxidizing lenses artificially. He soon found chemicals that would attack at least some of the glasses used in optical instruments. His treatment consists in immersing the lens immediately after polishing for a short time in an aqueous solution of ammonia and hydrogen sulphide. Experimenting further along the same lines, the writer has found means of oxidizing most of the glasses used in optical work. Using a barium crown glass of refractive index of about one and six-tenths, the untreated glass, in agreement with the Fresnel formula and with photometric measurement, transmitted eighty-nine per cent of the light, while of a set of similar treated samples the best transmitted ninety-six per cent. When a number of these are mounted in series, the difference in reflecting power is easily observed by the unaided eye, but the photometer shows that the amount of light taken away from the reflected part is actually not absorbed by the roughness of the surface, but is added to the transmitted part.—*British Journal of Photography*.

THE CAMERAMAN'S PAGE

Edited by Hal G. Hall

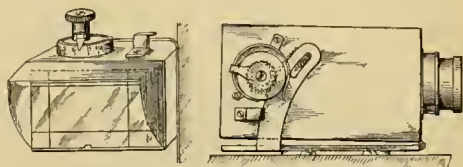
A Practical Department of Comment on Methods
and Apparatus

Scale Focussing

Carl Louis Gregory details a time and film saving method of setting the focus by scale and tape-line in his "Motion Picture Photography", in *The Moving Picture World*. We are well aware that many cameramen look with suspicion and even contempt upon any method of setting-up that does not involve focussing on the film or ground glass; and personally, we always experience a certain cranky satisfaction in using the ground glass that does not attend the use of finder and focussing scale alone. However, when one becomes accustomed to it a properly adjusted scale and finder certainly can be depended upon excepting for extremely close-up work. When time is at a premium, focussing by scale is a "life saver",—but the time to prepare for scale focussing is when time is not at a premium, for both the accurate laying out of a focussing scale, and the proper adjustment of a finder are tedious jobs.

Particularly conducive to accuracy in scale focussing is an adjustable finder, also set by scale. This, when properly adjusted, practically compensates for the effect of parallax due to the lens of the finder and that of the camera being a few inches apart. When the axis of the finder lens is parallel to that of the camera lens, the images are not formed in exactly the same relative position, such difference being very slight in the case of distant objects and quite considerable in that of close-ups. Incidentally, the amount of this parallax difference seems to vary in about the same ratio as does the focus between near and far objects. Some mechanical genius will perhaps devise, if he has not already done so, some simple method of adjusting the finder for parallax and setting the focus at one operation. Meanwhile, with a Pathe Studio Model camera, at least, there is no insurmountable difficulty attending the independent adjustment of finder and camera lens for varying distances.

As purchased, the front of the Pathe finder is hinged to a slotted metal plate that engages two studs of the side of the camera, adjustment in the horizontal plane being made by changing a set screw in the slot of a small metal arc. However, while this permits of adjustment to cover practically the same field of view as does the camera, up to a distance of about forty-three inches, the



TOP AND SIDE VIEW OF FINDER

arc used is so short that a calibrated scale is impractical, adjustment of finder while cranking being out of the question. Our method of overcoming this difficulty may be of interest.

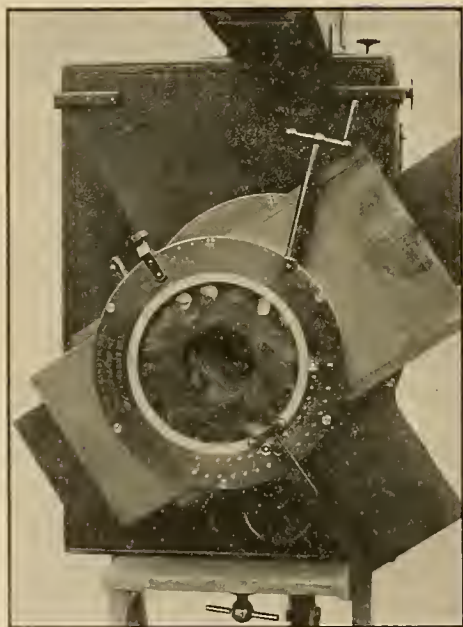
The set screw was cut off flush with the top of the slot and a rack attached to the rear edge of the metal arc. This rack engages a small pinion attached to the top of the finder. At top of pinion shaft is an adjustable milled head, operated, while turning if necessary, by the thumb and forefinger of the left hand. Between the milled head and the pinion wheel of this shaft is fastened a pointer arm of sufficient length to enable the pointer to pass over a metal arc carrying an engraved scale, and fastened to the top of the finder. On turning the pinion shaft the pointer travels farther on its calibrated arc than does the finder on its own slotted arc. The sketch herewith plainly shows that this rack and pinion arrangement is much simpler than the above description would suggest; in fact, the finder is as easily adjusted for distance as is the lens. With it one can, when required to change focus in a scene, easily make the finder adjustment and operate the panoram with left hand, while turning with the right. For

CAMERA CRAFT

close-ups a tape line can be used; while, in our own case at least, the agreement between shoe lengths and linear feet is such that greater distances are easily measured. While we have found scale focussing a real time saver that can be depended upon, we invariably sacrifice three or four feet of film to indulge in a peep at the ground glass whenever it can be done without delaying work.

Thalhammer "Travelling" Iris and Mat

An adjustable iris and mat attachment with a number of practical advantages is being made by Karl W. Thalhammer, 458 South Flower Street, Los Angeles, and a number of these are in use by cameramen there. Briefly, this device consists of an iris of unusual size, four sliding leaves that can be



run into the picture from any or all four directions, and three sleeves of different lengths that permit the attachment to be placed at any one of three different distances in front of the lens.

The iris is constructed so that it can be closed out entirely. Being large, the iris can be placed a considerable distance in front of the lens when a minimum of diffusion is required in the image of the iris. There is also a device by which the center of the iris can be located at any point of the picture,

enabling an iris-in or iris-out on the most important part of the scene, regardless of its location in relation to frame lines of picture. When the iris is to be opened or closed only part way, set screws give desired control.

The four mat slides, which can be used separately or in conjunction with the iris, are marked in eighths of an inch, permitting notes to be made in case a certain adjustment is to be duplicated at another time. These slides alone give a great variety of shapes; and, when used in conjunction with the iris, the number is increased. The Thalhammer iris and mat attachment, complete, sells for one hundred dollars, and an idea of its usefulness may be gained by inspection of the recent Triangle production: "The Captive God", photographed by Clyde De Vinna.

Fake "Moons" and "Sunsets"

In addition to being able to obtain any combination of circle and rectangle mats, Mr. Thalhammer explains how his mat and iris attachment, described above, can be used for a "sun" or "moon", by double exposure. For this purpose the iris, with a small opening, is attached by means of the longest sleeve, and the image of the iris is then double-exposed in the required place. A setting "sun" is obtained by gradually twisting the iris down across the field of view, and later cutting the film where the "sun" reaches the horizon. Of course, the scene must be rather under-exposed in order to permit the celestial orb to show up to advantage. Such a "sun" may be shot against a clear sky.

Worth Seeing

The artificial-light effects, with their pleasing naturalness, are well worth seeing in Morosco's "Pasquale", played by George Beban and photographed by Homer Scott. Pasquale's tete-a-tete with his horse, and the rooster's shadow, especially impressed us as welcome contrasts to diffuser-made lightings.

Against Censorship

A recent Fine Arts picture is preceded by a short leader making an appeal to fair play and common sense, and urging picture patrons to use their influence to put motion pictures on a legal equality with other forms of published matter. Good work.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Those Windy Days

There was an amateur friend in the office the other day, just on his return from a trip to the coast section of the southern part of the State. He had an enjoyable trip, a pleasant vacation, but the weather was so windy that no pictures were possible. The wind should have brought good wave studies but it seemed that he wanted pictures of the people along the shore, trees and landscapes adjacent thereto, and the like. This prompted us to look over some old issues of "Photograms of the Year" in order to show him that windy weather, particularly along a coast, was really the making of good picture material. A coast suggests storm and wind, and most of the objects along a coast have the appearance of storm and wind being their natural element. Examples of fine pictures of this class were not hard to find as they were quite generously scattered through these collections of good pictorial photography. Particularly effective seemed to be those representing female figures with the drapery showing quite plainly that wind was blowing at the time they were taken. A female figure in a wind is not always an inspiring subject, but with care used in selecting the moment when the lines of the drapery indicate, in a pleasing way, the presence of wind, a picture will result that is much more suggestive of sea coast conditions than the usual thing made when the air is more quiet, and the same holds good with trees and other landscape material. Of course short exposures must be given for this class of work, but the light is generally strong at the coast and a larger stop than that required for regular landscape work can nearly always be used.

Snap-Shots Without Sun

Some amateurs have an idea that snap-shots, that is, exposures of one-twenty-fifth of a second or less, can only be made in bright sunlight, while others seem to think that it is merely a question of having a

"fast" lens. Good results can be obtained in cloudy weather with a slow lens and one-twenty-fifth of a second exposure, but not in all cloudy weather and with all subjects. With a fast lens the field is enlarged to include more decidedly cloudy weather, a longer part of the day, and a wider range of conditions in the subject. Let us get a few of these conditions understood and we will find ourselves doing more work on cloudy days, I feel quite sure. One will find that some subjects are really better portrayed on a cloudy day than on one in which the sun is shining brightly. For example, the side of a house presenting the most pleasing aspect may be rarely if ever properly lighted by direct sunlight, even during the long days when the sun travels the farthest around to the east and west. Perhaps the house itself is well lighted by sunlight at some particular hour of the day, but near trees or other objects cast shadows that make the picture quite spotted and trying. In the first case a day may be chosen when the sun is obscured and the strongest light comes from the opposite sky, being reflected therefrom although direct sunlight is cut off by clouds. The lighting at such a time will have nearly all the effect of sunlight from a quarter of the sky in which the sun never appears. In the other case the soft light of a cloudy day will destroy or prevent the spotted effect, giving a much more pleasing picture. But to return to our short exposures. A slow lens is one that does not work at a larger aperture than f-11 or f-16, such being what are called single lenses, generally supplied with the low priced hand cameras. To make snap-shots with such a lens one must confine his efforts to the hours around noon, those in the middle of the day, about three of them in winter and perhaps four or five in summer. He must attempt only views having no dark objects or deep shadows within fifty feet of the camera, and he must avoid cloudy days that are quite dull. With a lens working at f-8, a wider range is pos-

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sible. One can work an hour or two earlier or later, some unimportant shadows can be within twenty-five feet of the camera, or the day can be a little more dull, but of course not all of these conditions should exist in the same case. If the shadows are close at hand, the picture should be taken near noon and the light quite clear, and so with any other condition. With an anastigmat or other good lens working at f-6.3 or larger, more latitude is enjoyed. Any two of the above mentioned conditions may prevail and good results be secured, or the degree of any one may be more manifest. The hour may be much earlier or later, quite a little shadow or dark color is permissible, or the degree of dullness may be quite marked, although there are still limitations that must be respected. In addition, it must be remembered that we have been supposing that each of the three lenses discussed are to be used all their respective full apertures. When the f-6.3 lens is stopped down to f-8 it of course requires the same considerations as the lens having that speed, and when either of the last two are stopped down to f-11, they become the same as the single lens. With these matters understood one will find that he can use his camera when the sun is not shining, in making hand-camera exposures, those of one-twenty-fifth of a second, or perhaps less under favorable conditions. And, the above should suggest that going afield on cloudy days, equipped with a tripod so that longer exposures may be given, may perhaps result in pictures not otherwise obtainable.

A Mysterious Effect

One of the photographic effects for which no quite satisfactory explanation is forthcoming is the light line which is often seen round some well-defined object in an enlargement. It is only seen where there is an abrupt contrast, and, as far as we know, only in enlargements. It has been suggested that it has some optical explanation, some altered refractive power in the film of the negative at those parts: but as no reason is given for such an alteration the explanation does not take us much further. Another theory, which has more in its favor, is that it is due to the developer along such a line being highly restrained by the passage into it of bromide from the developer

which has been acting extensively on the adjacent deep shadows. One effect of a developer doing work is the formation of bromide in it. If this is so, the result is the exact reverse of the black streamers in the sky which are obtained in tank development if the solution is allowed to stand undisturbed: these streamers being due to the transfusion of unexhausted developer from the shadow parts adjoining the high light of the sky.—*Photography*.

Correct Values

Does the average amateur ever stop to think how much time the artist spends in giving himself a real education of the eye, in learning as to what the real colors or nature are like? A tree in leaf is quite likely to be green, some shade of green, but it does not follow that a hillside covered with trees of this particular kind will look green as far as the eye can see it, or even at a much shorter distance. The average person does not know that such an object may not only appear a different color than green, but that it may appear as of one of several other different colors according to the atmospheric conditions. Of course, the amateur photographer is not particularly interested in color, but he should at least have some appreciation of the tonality changes due to intervening atmosphere. Take an ordinary landscape photograph and observe the depth of tone in which distant banks of trees are rendered. Particularly if they happen to be on the other side of a body of water, they will most likely appear as black as the darkest object in the picture. If we will but stop to think a minute we will realize that even the blackest coal piled up at that distance would appear only a dark grey. Not only does this lack of truth offend, but, distant objects are apparently brought forward by this falsification of tone and the picture lacks atmosphere and distance. There is practically nothing in nature that is black except the mouth of a deep cave, and even that does not appear black if the eye of the beholder is removed to a short distance. But we fail to realize this and when our print shows a distant bank of trees looking as if carved out of the blackest ebony and with all intervening atmosphere and reflected light excluded from between it and our eye, we fail to recognize the discrepancy.

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NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

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NOTE.—All stereoscopic slides sent to Director for the circulating sets must be mounted, titled, and show the maker's name and I. P. A. number on the back of mount. Notify the Director how many mounts can be used, and a supply will be sent you by return mail.

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Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

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Utah—John C. Swenson, A. B., Provo.

West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS.

4236—William Rocamp, Ashville, P. O., Manitoba, Canada.

3¼x5½, developing and printing-out papers of Western Canadian Scenes; for children or any subjects of interest. Class 1.

4237—Harold Radley, 501 South Lumber St., Bloomington, Ill.

3¼x5½, various papers, of park views, railroad shops, and city views; for anything. Class 1.

4238—Arta Briggs Wilhelm, R. F. D. No. 2, Alamosa, Colo.

Up to 11x14, usually developing papers, of largely speaking the artistic side of nature; for anything of general interest. Class 1.

4239—Edward M. Howard 1734 Anacapa St., Santa Barbara, Cal.

3¼x5½, various papers, of landscapes; for the same. Class 1.

4240—C. F. Smith, Colville, Wash.

2¼x3¼ up, various papers, of views and portraits; for views mostly. Class 1.

4241—Phil Middlebrook, 2744 Columbia St., San Diego, Cal.

3¼x5½, various papers, of mostly locomotives, some scenery, and water views; for locomotives if possible or railroad scenes. Class 1.

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4242—Rev. Oliver Saylor, Lompoc, Cal.

Class 2.

4243—J. W. Edwall, Tillamook, Or.

Class 2.

4244—Leslie Jones, Box 142, Bell Buckle, Tenn.
2½x4¼ to 3½ to 3½x5¼, various papers, of
anything you want; for groups of girls not
over 18 years old in bathing costume. I de-
sire to exchange roll films only. Class 1.

RENEWALS.

2404—A. E. Fyall, Lower Nicola, B. C., Canada.

Class 2.

2984—Chas. M. Seymour, 1186 Park St., West

Hartford, Conn.

5x7 and smaller of scenic and miscellaneous,
military, agricultural, children; for outdoor
and interior portraits and odd subjects.
Class 1.

3962—O. R. Jones, W. 2315 Sinto Avenue,
Spokane, Wash.

Class 2.

4126X—John Bieseman, Hemlock, Ohio.

Use 5x7 camera, can exchange post cards at
all times as I keep a full supply of these
ready. Desire good work and also photo
correspondence to accompany each exchange.
Class 1.

CHANGES OF ADDRESS.

502—F. B. Hinman, 1369 South Washington

St., Denver, Colo.

(Was Union Depot.)

3085—Thos. Bradt, Bethany College, Bethany,

West Va.

(Was Canton, Ohio.)

3212—G. L. Massey, Bisbee, Ariz.

(Was Omaha, Nebr.)

3385—Charles I. Reid, care The Cleveland

Photoplay Co., 1900 Euclid Ave., Cleveland,

Ohio.

(Was Millersburg, Pa.)

3830—Dr. Addison O'Neill, Box 525, Daytona,

Fla.

(Was Lakeport, N. H.)

4080—A. T. Moss, P. O. Box C, Napa, Cal.

(Was Hyampom, Cal.)

4090—John W. Cook, 2511 Dwight Way, Ber-

keley, Cal. (Was Los Angeles, Cal.)

4166—Ernest Smith, Ford City, Mo.

(Was Kayenta, Ariz.)

4172—J. C. Flint, 687 61st St., Oakland, Cal.

(Was 5506 Market St.)

4193—Sgt. Wm. H. Smith, Camp Finis, Gray-

ling, Mich. (Was Flint, Mich.)

4215—Roy H. Wagner, Cody, Nebr.

(Was Chadron, Nebr.)



CLUB NEWS AND NOTES

A Pictorial Exhibition

At the California Camera Club, on the evening of August twenty-first, there was a loan exhibit of the work of that sterling pictorialist, Mrs. Nancy Ford Cones. This lady we learned is the wife of a well-to-do farm owner and lives and makes her pictures on and about that farm. As one viewed the high artistic conceptions, the remarkable breadth of treatment, and delicate sentiment shown, the idea impressed itself that opportunity is less a factor in art than genius. Over eighty prints were exhibited and almost every medium was represented, gum predominating. The attendance was surprisingly large as an outing had been held by the Club the day before and Monday is not a popular night at best. Judging by the groups gathered in front of the pictures and the warm discussions the exhibit offered something new and worth while to those who attended. Sigismund Blumann, through whose courtesy the prints were shown, delivered a short talk on Mrs. Cones, her methods, and the subjects treated, and under the same gentleman's direction an hour of music was given to close the evening. The orchestra which was permitted to volunteer by the local Union, was composed of six of the leading performers of San Francisco. It is sincerely to be hoped that the well known modesty and reticence of Mrs. Cones may not be permitted to deter her from ex-

hibiting at the forthcoming Salon and that she may be amply represented.

Courses In Photography

Recognizing the broadening influence of Artistic Photography in Portraiture, Magazine Illustration and as a medium of Art expression, the Department of Photography of the Brooklyn Institute of Arts and Sciences has decided to increase the scope of its work in securing the cooperation of three of the most prominent pictorialists in this country; namely, Paul Lewis Anderson, Karl Struss and Clarence H. White. The course will consist of twelve sessions, the first four of which will be given by Mr. Struss on October fifth and nineteenth and November second and sixteenth. The second four sessions will be given by Mr. Anderson, in December and January, and the last by Mr. White in February and March, on alternate Thursday evenings. Anyone interested in photography living near New York and Brooklyn will be well repaid by attending this special course, which is open to beginners as well as advanced workers. It is an unusual opportunity for all photographers. The cost of tuition for members of the Institute is ten dollars and fourteen dollars for all other persons. Write at once for prospectus giving full particulars, to the Brooklyn Institute of Arts and Sciences, Academy of Music, Brooklyn, New York.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

We on the Coast have had the pleasure of another visit from H. F. Hoeffe of the Century Division, Eastman Kodak Company.

Fred Seyler of Taprell, Loomis County, Chicago, has been with us again with the newest styles in mounts.

Still another jitney driver. E. Miller of Howland & Dewey Company is the latest victim.

Harry Richardson, the jovial Premo salesman, has just completed a new home in New York.

Duke Buttrick is making his territory in an Oldsmobile roadster painted crimson red, the upholstery being in tapestry. Ask the Duke why he fights shy of fire hydrants.

A. C. Vroman, kodak dealer of Pasadena, passed away July twenty-third.

Mr. Prinz and family of Pasadena spent a week at Long Beach the other afternoon.

The deer season brought out some of the good hunters, Shirley V. Bacon of Long Beach being among those present.

Hallie Cody of Long Beach is to be married.

C. C. Lord of Long Beach is now called Grandpa, a new grandchild in the family.

Some Good Negatives For Sale

Harry F. Blanchard of 65 Hudson Street, South Glens Falls, New York, advises that he has about one thousand genre and child study negatives, size 5x7 and 6½x8½ that he wishes to dispose of at a reasonable figure, doing so at the earliest possible moment. These are all examples of good photography and story-telling pictures and anyone interested in a purchase of this kind should get in communication with Mr. Blanchard at once.

Aabameters Prove a Success

We are just in receipt of a letter from Mr. Steadman advising that the first order of two thousand Aabameters to come through the factory have been taken almost entirely by the New York dealers and that these

latter find them excellent sellers, not only to the amateurs, but to professionals as well. While an order for a new supply is going through the factory Mr. Steadman himself will make a trip to Porto Rico in order to finish up not a little photographic work that demands his attention there. This work is not only very profitable, but Mr. Steadman is desirous of complying with the wishes of his many patrons there, and therefore the opportunity is one that he cannot well decline. In the meanwhile the business of filling mail orders and attending to direct inquiries will not be neglected as it will be in the hands of one who can give it every attention. This will explain the change in address that has been made in his advertisement from Sacramento, California, to Concord, New Hampshire, as the idea of locating at the former place has been abandoned, at least for the present. The address given for the Aaba Foto-Servis, Concord, New Hampshire, will bring prompt attention to inquiries or orders forwarded there.

The New Developer Fredol

From Burke & James, Incorporated, we have received samples of Fredol, a new developing agent that they advise is similar in composition and characteristics to Metol, one that has proved to be entirely satisfactory for developing papers, films and plates. Fredol has not only been thoroughly tested in their own laboratories but also in actual practice by many leading photographers who have substantiated their recommendations by repeat orders. Fredol is used in exactly the same manner and quantity as Metol in all standard developing formulæ. When mixed with hydroquinone, in either powder or liquid form, it keeps almost indefinitely. It has been on the market about three months under the name Ramidol, now changed to Fredol, as a compliment to its producer, Dr. Friedman, a German chemist who gained his technical knowledge from association with large producers of similar products in Germany. It

is made in Minneapolis by the important chemical manufacturing concern of Mc-Loughlin-Gormley-King Company. Impressed by the great superiority of Fredol over other Metol substitutes on the market, Burke & James have secured the sole wholesale agency. If your dealer has not already secured a supply, descriptive circulars and prices can be obtained of Burke & James, Incorporated, 240 East Ontario Street, Chicago.

Addition To Plant

The Imperial Brass Manufacturing Company, 1215 West Harrison Street, Chicago, makers of the Imp Flashlight Gun, advise that their company will start construction within the next ten days or two weeks of a new addition to their present plant. This last contains seventy-five thousand feet of floor space and the new addition will contain an equal area. The new building, like the old, will be of heavy mill construction and located on the site adjoining the present plant, corner of Harrison Street and Racine Avenue, six minutes from the Chicago Loop District. The present plant has been running night and day for many months without doing a penny's worth of war business, and there is every expectation of filling the new plant to its full capacity as soon as it is in operation.

A New Aabameter Card

We have just received from Mr. Steadman samples of a new exposure card to be used with the Aabameter. These together with the new instructions to conform therewith add greatly to the simplicity of the determination of exposures, as they are based on the "tint time" method, rather than on the unit or actino of light measurement. Mr. Steadman reports a large demand for the meter and despite the delay that has occurred he is most gratified with the number of orders coming in.

Caltone, A New Developer

We were recently shown some very fine negatives by one of our local commercial photographers with the request that we pass judgment upon their quality, as they have been developed with the new Caltone developer being put out by the Berlin Aniline Works. The photographer was highly delighted with the quality of the negatives and advised that he had found it the best of sev-

eral Metol substitutes that he had tried. A small sample reaching us a few days later we placed in the hands of an amateur friend who is a great experimenter with developers and he has just reported it as being exceptionally satisfactory, despite the fact that he used it on some very uncertain exposures and did not have the time or opportunity to mix it up according to the formula furnished. Our readers who are desirous of finding a developer to take the place of unobtainable Metol should get a sample of this new developer and give it a trial. We believe it will be found with most dealers but if unobtainable a sample can be obtained by addressing the Berlin Aniline Works, 213 Water Street, New York City.

"Water Fowl and Turkey News"

Heretofore, the man or woman interested in ducks, geese, turkeys, rabbits, pigeons, and the like have had to depend upon an occasional article in one of the numerous poultry or farm publications. This condition is being done away with as fast as the new magazine gotten out by W. C. Cruser, 425 Linden Street, Scranton, Pennsylvania, can be brought to the notice of those interested in such a publication. The new magazine, *The Water Fowl and Turkey News*, costs only fifty cents a year and a trial subscription can be secured for only ten cents. It is brimful of helpful and informative matter that tells the breeder just what he wants to know about raising and caring for water fowl, turkeys and pet stock. Such of our readers as are interested in any of these should send the ten cents to Mr. Cruser for the three months' trial subscription and do so at once before it is forgotten. They will certainly not regret having done so.

An Instructive Paper

We have just received from the Cooper Hewitt Electric Company, Eighth and Grand Streets, Hoboken, New Jersey, copy of a beautifully illustrated reprint from *Abel's Photographic Weekly*, entitled "Some Photographs by Cooper Hewitt Light". This is an article by Edward R. Trabold, a photographer well known for the high quality of his work, and one who has contributed excellent articles to our own pages. This paper carries some fine illustrations showing the arrangement and use of the Cooper Hewitt Light in portraiture, together with some beautiful examples of work made as

NOTES AND COMMENT

described. Copies of this reprint can be obtained by applying to the Cooper Hewitt people whose address is given above, and we feel sure that any and all of our readers interested in portrait work will be well repaid for the small trouble of sending in their request.

Courses In Photography

The Department of Photography of The Brooklyn Institute of Arts and Sciences begs to announce that it has again secured the services of William H. Zerbe to conduct a course in Photography, beginning October third. As heretofore, there will be a class for beginners and one for more advanced workers. Students who have taken the courses in previous years are enthusiastic over Mr. Zerbe's painstaking methods of instruction. Mr. Zerbe always brings himself down to the level of the students, refraining from using technical terms, so that one cannot but help to advance in his photographic work. Write for a prospectus giving full particulars. Address Brooklyn Institute of Arts and Sciences, Academy of Music, Brooklyn, New York, or to William H. Zerbe, 345 Spruce Street, Richmond Hill, New York.

Illinois College of Photography

Fred G. Snyder, who has spent the past few months in the city attending the College of Photo-Engraving, has accepted a position in Ithaca, New York.

We note that A. L. Scott has purchased a studio in his home town, Frankfort, Kentucky. Since leaving College he has been connected with the Steffens-Berry Studio in Louisville.

Among the new students is Frad S. Natusch of Regina, Saskatchewan, Canada.

During the past year he has been on a visit to England, from where he came direct to enter the College.

For the third consecutive year, Edward H. Weston of Tropico, California, has had work selected for its Salon by the National Convention. This speaks well for his workmanship and the I. C. P. is proud to be his Alma Mater.

President and Mrs. L. H. Bissell have been in California the past month, on their annual visit to their daughter, Mrs. Ruby Magee, and family, who live in San Francisco. They also visited at several other points within the state.

In a recent issue of *The Theosophical Path*, a magazine published at Point Loma, California, there appears four pictures of Japanese interest, taken at the Exposition at San Diego, California. The negatives of the pictures were made by T. Matsuda of Kachiti, Japan, who is a student of the Illinois College.

The Effingham County Fair was well patronized this season by the students of both Colleges; in fact, they were so enthusiastic that it was arranged to dismiss school after a quarter day session, to allow them to see the sights. Everyone was well pleased with the outing.

The distance from Boise, Idaho, to Effingham, Illinois, is over 2000 miles by railroad, and must seem much greater when traveled on a bicycle. However, the trip was made in this way by Harlan C. Campbell of that city, who recently enrolled as a student. His plan was to spend his vacation en route, and though he was on the way over three months, yet the actual number of days traveling amounted to only about one-third of that time.



CAMERA WANTS

Advertisements of the above nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted free. No business advertisements accepted.

10x12 GUNDLACH Rectigraph lens, newly fitted with Iris diaphragm; list, \$60.00; will sell for \$25.00. N. C. H., care "Camera Craft," San Francisco, Cal.

FOR SALE Good little studio, very best location, ground floor, lease, low rent, no competition, established 10 years. Good reason for selling. A bargain for some one that means business. Photo Studio, 1120 W. 24th St., Los Angeles, Cal.

FOR SALE 5x7 view fitted with Gundlach Manhattan f:6.8 anastigmat lens in Optimo shutter, 9 double plate holders, case, tripod, lot of other things like new, cost \$78.60 at wholesale, take \$60.00. Also 3A Graflex fitted with 5x7 Zeiss Tessar IC f:4.5 lens, cost \$135.00 two years ago, take \$85.00. Both outfits guaranteed. Will take high grade 3 1/4x5 1/2 Kodak or similar in exchange on either one. H. G. Raveling, Warren, Minn.

FOR SALE Investigate this proposition if in search of bargain. Studio in Central California town of 3,500. Complete outfit, good prices, Kodak agency in connection. Interests elsewhere demand attention. Address B. O. X., care "Camera Craft", San Francisco, Cal.

WANTED A 5x7 camera of standard make equipped with anastigmat telephoto lens. Must be first class and low in price. P. O. Box 678, Grants Pass, Or.

SALE OR EXCHANGE Studio outfit for typewriter, folding camera, gun or any thing useful. J. R. Bakula, R. F. D. No. 1, Dubuque, Iowa.

WILL TRADE American Motion Picture camera equipped with f:3.9 Bausch & Lomb lens, cost \$250.00 and in new condition for good Graflex with fast lens. J. Arthur Reid, Millersburg, Pa.

FOR SALE Brand new No. 1 2 1/4x3 1/4 Auto-graphic Kodak Special, Zeiss Tessar f:6.3 lens, lists \$45.00, will take \$35.00 (no trade). Ernst Grams, Michigan City, Ind.

FOR SALE 4x5 camera 6 1/2 inch Goerz Dagor f:6.8 lens, Optimo shutter, case, holders, adapter and developing outfit, cost \$80.00, take \$37.50 or lens and shutter \$27.50. Hinds, 1915 Park Ave., Denver, Colo.

SALE OR EXCHANGE 6 1/2 x 8 1/2 Zeiss Protar, Auto shutter \$50.00, exchange for 5x7 Dagor or Protar to use on hand camera. L. M. Hall, Medford, Or.

FOR SALE Kinograph moving picture camera, new, never used, with f:3.5 Zeiss Tessar lens. Three extra film boxes, Kinograph tripod and 700 feet Eastman negative film. Cost \$150.00, take \$100.00. 5x7 Telephoto camera, Gundlach lens and shutter, three holders, set of five convertible ampliscopes, tripod and sole leather case, \$20.00, 6 1/2x8 1/2 series V Bausch & Lomb Zeiss Protar with Low shutter, good as new, \$25.00. Also 4-inch Silent Studio shutter, new, \$2.50. W. S. Valentine, Redding, Cal.

FOR SALE Zeiss Protar VIIA No. 13, f:6.3 in Volute shutter, including barrel mount with Iris diaphragm. All in first class condition. Price \$65.00, cost \$129.50. A. L. Sears, Mount Vernon, Wash.

FOR SALE Inverness studio, one of the best locations in Fresno, California, corner of Fresno and J Sts. Studio established over 15 years. \$1000.00, terms \$600.00 cash and balance to suit. \$800.00 cash takes it or \$500.00 cash and I take everything out. Inverness Studio, 1941 Fresno St., Fresno, Cal.

FOR SALE New \$140.00 Eastman home portrait outfit complete; camera, f:6 portrait lens, shutter, stand, head cloth, reflector, background and carrier, 9 double plate holders. All contained in two small cases. Sell for \$80.00 or will trade for 3 1/4x4 1/4 R. B. Graflex fitted with IC Tessar 4.5 lens. E. S. Hamilton, 1576 Milwaukee Ave., care N. W. Pharmacy, Chicago, Ill.

QUICK FINISH Post Card studio for sale, best location in San Francisco. Owner has two studios but can handle only one. You can have your choice. Address M. M., care "Camera Craft", San Francisco, Cal.

MOTION PICTURE Camera, Prestwich No. 5 motion picture camera, with Zeiss Tessar f:3.5 lens, professional tripod with tilting and panoramic top, extra fade out and iris attachments, carrying cases for camera and magazines. Complete outfit in fine condition and suitable for most exacting professional work. Outfit cost new \$360.00, sell for \$170.00 cash. Write or wire to Cameraman, Room 316, 1900 Euclid Ave., Cleveland, Ohio.

FOR SALE Studio in mining town 8000 population, monthly payroll \$150,000.00; nearest town 7 miles, population 12,000, good payroll; 8x10 Century camera, Voigtlander lens. Three years' lease, third door from post office, one competitor. Splendid opportunity for right party. Good reason for selling. Fisher Studio, Miami, Ariz.

RETOUCHER And printer wanted by one of the leading studios in Southern Oregon. Either man or woman able to work in backgrounds, color portraits, etc. Address giving full particulars, A. C. H., care "Camera Craft", San Francisco, Cal.

FOR RENT Furnished studio doing good business, January 1st, with privilege of buying. Address Box 673, Lyons, Kans.

HESS-IVES 3 1/4x4 1/4 outfit, new and complete. For sale or will exchange for suitable outfit for traveler. Tenax or similar 3 1/4x4 1/4 or post card size film-plate camera preferred. R. G. Manifold, Riverside, Cal.

FOR SALE Two tube Cooper Hewitt light and rectifier. Richard H. Smith, Missoula, Mont.

WANTED An expert receptionist for high class studio. Address O. P. Angvire, Spokane, Wash.

FOR SALE 5x7 Empire State View camera, tripod, Conley 3-focus R. R. lens, 6 plate holders, carrying case. Money back if not satisfied; \$18.00. Wilfred Henwood, 420 South 5th St., Victor, Colo.

FOR SALE Studio with up-to-date equipment located in one of California's most substantial and growing cities, Vallejo, 15,000 population. Only one other studio. Well established business with good prices. The future is assured in the government policy of battleship construction at Mare Island Navy Yard, where thousands of mechanics are employed. Also the Pacific Naval Fleet affords a field of business from the officers and enlisted men. \$700 cash; a bargain. Failing eyesight compels sale at a sacrifice. For full particulars address E. K. Halverson, 413 Georgia St., Vallejo, Cal.

FOR SALE Good studio. Business brought \$2500.00 last year. Good place for German or Norwegian. Price \$1500.00, which includes dwelling and lot. Very easy terms to right party. Address J. DeWilde, Cashier First State Bank, Prairie Farm, Wis.

CAMERA CRAFT



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CAMERA CRAFT

A Photographic Monthly

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Flashlight Pictures

At this season the advantages of the flashlight are quite apparent and the photographer, both amateur and professional, should make full use of the power thus placed at his disposal.

Lamps that are right and powder that is fresh is stocked by us in large assortment. Use them and you'll be pleased with the results.



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SAN FRANCISCO



A HOME PORTRAIT
By THOMAS SOUTHWORTH



CAMERA





CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

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No. 11

Enlarging for the Portrait Photographer

By Thomas Southworth



With Illustrations by the Author

In my own work of home portraiture, I use only 5x7 plates or films, mostly the Eastman portrait films. Since it is practically impossible to detect any difference between an 8x10 contact print and an enlargement, provided the latter is made from a good, sharp negative, with the same kind of paper used and the work rightly done, I find the plan of making comparatively small negatives and enlarging therefrom much more economical. Using the smaller film I feel warranted in being more liberal with my exposures; and, doing so, the average of satisfaction is bound to be higher. From this greater number of negatives a selection is made and these last I retouch, working under a good magnifying glass when the order is to be for larger prints. My light equipment for enlarging is an Aristo lamp behind nine-inch condensers. I have found that, even with a fast lens, any less powerful light makes is necessary to give too long exposure for Artura Iris or similar papers. And that reminds me of a little matter I have discussed and heard discussed at various times, namely, whether it is possible, when making enlargements with an anastigmat lens, to secure any greater or more sharp definition by stopping down, assuming the best possible focus has been secured with the lens wide open.

Theoretically, it may be reasoned that by virtue of the fact that the negative from which the enlargement is being made has no depth, nothing is gained by stopping down after a perfect focus is secured. In actual practice I find it otherwise. It is just possible that, on account of the extremely strong light used, reflections from the inner surfaces of the lens have a flattening or diffusing effect which decreases in proportion to the amount of stopping down.

CAMERA CRAFT

One can realize that a perfect focus is imperative in turning out 8x10 prints made from 5x7 negatives, particularly those showing several small figures and much room furnishing detail. Practically all of my work is of this detail demanding character and quite naturally I have experimented not a little to determine exactly how little stopping down will give me the desired result. I use an f-4.5 portrait Unar, and stop down to f-5.6 or f-6.3 in making all my

negatives, but in making my enlargements the lens is stopped down to f-8. On those few occasions where I carry forward a bust negative I find it more satisfactory to secure the desired normal diffusion by using the lens at its full opening in making the enlargements. In this connection it occurs to me that a description of my copying and enlarging equipment may be of interest.

For every phase of my work except of course operating, I use only one small room. This necessitated not a little planning in order to have everything as ideal as possible, and this last condition I claim to have secured. My enlarging and copying apparatus takes up only nine feet along



A PORTRAIT MADE IN THE HOME

one side of the room, the lamp house taking up three feet leaves me six feet in which to place camera and easel, as shown. This lamp house and the bench at the left are twenty-eight inches deep. The lamp house, made light tight, contains, in addition to the Aristo lamp, a small easel on which is placed pictures to be copied. In the wall opposite the center of this last is located a hole fitted with an extra lens flange, the wall surrounding being covered with a fifteen inch square of black velvet. At both sides of this square, on a line with the lens opening, is

ENLARGING FOR THE PORTRAIT PHOTOGRAPHER

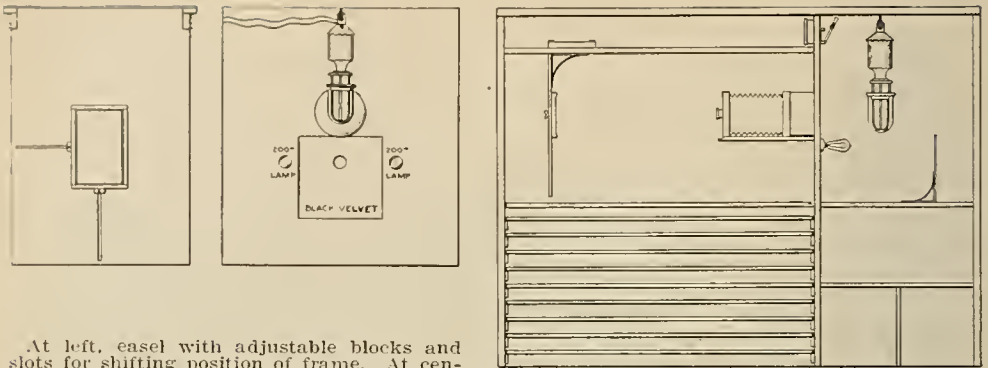
situated a two-hundred watt tungsten lamp, these last used for illuminating the small picture being copied. This gives me a good volume of light; and, coming from both sides as it does, the grain of the paper is not emphasized. This arrangement, using the room itself for a camera with the lens in the wall as shown, does away with the expense of a long bellows camera and reduces to a minimum the annoyance and uncertainty of getting a sharp focus, especially when enlarging a small copy many diameters. Not only is the expense of a camera avoided, but almost any lens will answer so long as an enlargement of enormous size is not required.

To make a copy I pin the small picture to the easel within the lamp house, put the lens in place, lower the 5x7 printing frame by means of the slot in the large easel, focus upon a piece of white paper enclosed within the frame; and then proceed exactly the same as when making an enlargement on paper. The two slots and the blocks for holding the frame on the easel admit of any shift of position necessary to bring the image straight and centered on the white paper in the frame, this paper being replaced by the plate when the exposure is to be made. It will surprise anyone who has never used this method of copying to find how very easy it is to get a sharp focus. Well I remember how, years ago, the labor entailed when enlarging small figures from old tintypes to 11x14 or 16x20. I would carefully drape three or four large covers over the end of my 18x22 camera so as to exclude every trace of light around my head, wait about five minutes to secure eye accommodation



A CHARMING FAMILY GROUP

CAMERA CRAFT



At left, easel with adjustable blocks and slots for shifting position of frame. At center, inside arrangement of lamp house front with lens opening surrounded by black velvet with lamps at sides and condenser above. At right, arrangement of enlarging apparatus, showing economy of space achieved.

before attempting to focus, and then never felt quite certain that the image would be sharp. With my new arrangement I work standing inside the camera, and the experienced photographer can see at a glance that this method is much more efficient and greatly superior to the old. The two tungsten lamps are far enough apart to prevent their being reflected by any part of the copy, and the black velvet around lens on inside of lamp house also kills possible reflection of a less direct character. The electrical connection is situated outside just below the lens. This consists of a forked cord that connects with an ordinary socket near at hand, the key of this last serving to turn on or off as required.

My method of making 8x10 or larger prints from the 5x7 portrait film negatives, requires only an examination of the sketches above. The Aristo lamp is about ten inches from the opening in the division wall, on the other side of which are located the nine-inch condensers and the camera as shown. The small sketch gives a good idea of the arrangement of the easel carrying the printing frame in which the paper is placed. The switch and rheostat for the Aristo lamp are shown above the condenser box, although the individual exposures are made by means of a lens cap. This last is fitted with a yellow glass front in place of the opaque leather covered material. When not in use the easel is pushed back against the wall at the left, and the bench, six feet long and twenty-eight inches wide, can be used for other work, there being no track or like obstruction in the way. The space below this bench is occupied by a series of frames used for drying prints. These are made from inch square lumber, are covered with cheese-cloth, and slide into grooves made by nailing 1x2-inch strips twenty-eight inches long, across each end, spacing them a little over an inch apart. Under the lamp house is a 28x30 shelf and the space below is divided into two compartments by a support in the middle. Just above the arrangement is a shelf, nine feet long, one end serving as a ceiling for the lamp house.

As the reader, who has perhaps himself tried to make a lighting by flash-light such as the one here shown, may be interested I will try and explain how such results are secured. The sitter is posed in the selected spot, one that permits of the flash machine being placed a little back of and enough to the side to be well out of the picture. Then a reflector, raised high enough to be just off the plate, and about two feet in front of the sitter, is adjusted, while the

ENLARGING FOR THE PORTRAIT PHOTOGRAPHER



A VERY PLEASING LINE LIGHTING EFFECT

camera is used in its usual position with the lens of course pointing under the bottom of the reflector. As the front of the flash machine or cabinet is usually made at an angle to throw the light downward, I interpose a supplementary diffusing screen, suspended from the arm of a light stand, in such a manner that the reflector receives the direct light from the flash while the light reaching the sitter must pass through the additional diffuser. I use Victor powder exclusively and find that this particular lighting requires about three times the usual amount. This arrangement is the best of the many I have tried for securing this effect. Just a little care and time is necessary to secure a correct adjustment of this additional or auxiliary diffusing screen as it must prevent all direct light from reaching the sitter and at the same time must not come within the field of the lens or interfere with the full force of the light reaching the reflector.

Pictorial composition may be defined as the proportionate arranging and unifying of the different features and objects of a picture. It is not the huddling together of miscellaneous studio properties—a dummy, a vase, a rug here, and a sofa, a fireplace, a table there; it is not the lugging in by the ears of unimportant people to fill up the background of the canvas, as in the spectacular play; it is not taking a real group from nature and transplanting it upon canvas. There must be an exercise of judgment on the part of the artist as to fitness and position, as to harmony of relation, proportion, color, light; and there must be a skilful uniting of all the parts into one perfect whole.—JOHN C. VAN DYKE.

Finding Out What the Public Wants

By J. Clyde Wilson



With Illustrations by the Author



THE CHAMPION PIE EATER

F. Dundas Todd, when he was editor of *The Photo-Beacon*, used to tell a very pointed story to illustrate the importance of seeing things from more than one angle. As those photographers who have enjoyed Mr. Todd's pithy discourses will recall, he had a vigorous, insistent style, and gave voice to whatever was on his mind at the time of writing which could, by any stretch of the imagination, bear upon his subject. This sometimes led him to make seemingly conflicting statements, so that he was frequently open to the charge of being inconsistent. How well he was able to defend himself from this accusation is well illustrated by the following story:

One day while returning from a convention of photographers, where he had made an address, he was accosted by a young man who sat opposite him in the railway car. "That was a fine address you made at the convention yesterday," began the young man, "only it seemed to me you were a little inconsistent."

"Inconsistent?" repeated Mr. Todd, questioningly.

"Yes!" returned the young critic, "You said a man had a perfect right to change his mind every five minutes if he wanted to, because we can never tell one minute what may arise the next to alter our opinion."

"Well, isn't that true?" asked Mr. Todd.

"I can't see how it is", retorted the critic confidently, "That would leave a man without convictions."

"Well, let me show you what I meant," returned Mr. Todd indulgently.

"Do you see that farm-house ahead, out the car window?"

"Yes, the *little* house over there, sure."

"Well, take one good look at it now because you are going to change your mind about it in a minute. You'll find that isn't a *small* farm-house at all."

"Well, perhaps that's true," replied the young man, but from all the evidence at my command when I said it was *small*, I had a right to so describe it."

FINDING OUT WHAT THE PUBLIC WANTS

As they talked the train whirled on. "Well, you look back at it now," Mr. Todd advised quietly. The young man did so to discover a great rambling farm-house with two long wings which had been wholly invisible from the approaching train.

"You're right," concluded the young man, "It's a very large place, but I'm looking at it now from a different angle."

"Well, you see, that makes a lot of *difference*," smiled Mr. Todd triumphantly, "And don't forget the fact that you formed an opinion and changed it all in the small space of less than one minute." The victory was complete.

"Yes, but——" protested the young man.

"——that's better than I ever did in my palmiest days," finished Mr. Todd, and they both laughed.

It is always worth while to see things from as many angles as possible. Particularly is this true of the photographer whose business depends so much on individual whim and so little on necessity. It is worth while trying to see just how the public looks upon photographs. When we are too close to an object—as the photographer is to his business—we are so absorbed in its various details, that it is with difficulty we can see it in its entirety. We take a narrow view of it, influenced, most decidedly, by that phase of it which appeals most strongly to our own temperament. In a measure this is well, for we cannot produce anything thoroughly good without a careful consideration of details, but it is equally true that perfect work is not possible without broad vision and the ability to stand away disinterestedly and size it up with the impersonal judgment of the outsider. We hear a great many photographers asking the question: "What is the matter with photography?" The frequency with which we hear it, and the seriousness with which it is put seems to indicate that something is really wrong. What is it?

My neighbor Jones stopped mowing his lawn the other morning and came over to our fence line. "John," he called to me—I was sprinkling the garden at the time—"I want to show you some snap-shots my Cousin Jim took when he was over, last Sunday."

I set the nozzle of my hose on a brick to take care of itself and went over to look at the pictures. My neighbor fished in his pocket and finally extracted a package of letters and other rubbish. In an old envelope ragged with age and none too clean he discovered the prints. He withdrew them fondly and handed them over for my inspection. They were little amateur shots, about half the size of one's palm. The blacks were black with a vengeance, and the whites were as white as the whitest whitewash that ever graced your cellar wall. The negatives had been underexposed and printed on the contrastiest paper that could be found. They curled badly and were occasionally streaked when they were not gray as a London fog.

My neighbor stood back with a smile of confidence and indulgently awaited my verdict.

"Well, what do you think of them?" he asked.

I was just going to pass some extravagant compliment when he interrupted and saved me from my own folly.

"I think they are the best pictures we ever had of Mabel," he confided.



A GROUP MADE IN THE HOME

I thought of the beautiful pictures I had taken of her last spring at my studio—pictures I had put all my best efforts into, and the best of workmanship, because he was my neighbor. I said nothing, but smiled graciously. Self-control puts severe tasks upon us sometimes. As a photographer it goes against my grain to commend slipshod work. Like every other photographer, I take a wholesome interest in good technique, so much so that it is almost a hobby with me. I look for perfect negatives and perfect prints even before I consider the subject of the picture at all.

"Well, what do you think?" my neighbor pressed me at last, smiling good naturedly and confidently.

It wouldn't be just right to pour a cold stream upon his enthusiasm, it was so beautiful in itself. What was I to do? I hadn't the heart to say they were abominable negatives and worse prints—but that's what I thought. I should never forgive myself for doing it, neither would my neighbor, or my wife. Well, to make a long story short, there are times, it seems to me, when a lie isn't always a lie—there are extenuating circumstances, don't you know, when charity supersedes all the virtues—and this was one of them. I brought myself together, held the prints out at arms' length with mock admiration, cocked my head at a critical angle and was on the very point of uttering the untruth when he interrupted me again; he too was surveying them—with admiration. "By Jiminy. Those are great!" he exclaimed, "and so like her mother. Got her pose and expression to a T."

I smiled. I vow I am not of a mean disposition, or sarcastic, but there *are* times, you know——! The picture he was raving over was the "gem" of the collection. The little girl's feet were too near the camera and appeared exceptionally large, the dress was badly wrinkled and very untidy, and her smile seemed perfectly preposterous. Moreover the films had been lightstruck. I was going to call his attention to these defects when he said:

"John, I wouldn't part with those pictures for one thousand dollars."

I know I wouldn't pay that for them, but what could I say?

I can't get one-one-hundredth of that amount for my cabinets as a rule.

FINDING OUT WHAT THE PUBLIC WANTS



GOOD PORTRAITS IF NOT THE CONVENTIONAL STUDIO LIGHTING

I have spent all my life making pictures and believe I possess at least some skill at my labors and I know my workmanship is a few thousand times better than was the workmanship on these snap-shots. Yet he wouldn't part with them for one thousand dollars.

"Why, John," he went on in explanation, "They are living likenesses of her,—true as life itself." He extracted an odd one from the bunch; "Look at that now. Isn't that a corker," and he held it up admiringly. "And here's another peach, John," he suddenly exclaimed grabbing the pictures from me impulsively and shuffling them over rapidly in his hand till the so-called "peach" turned up.

"I think this one is a wonder!" he exclaimed as he held it up before my gaze. I nodded. As I did so he unconsciously got his head almost in front of my face that he might be squarely in front of it and so gaze more intently upon it. It was another shot of Mabel.

"Ain't it cute?" he gloated.

I am sure there must have been murder in my eye at that very moment but I smiled bravely. I didn't think it cute at all. Another view overlapped it from a double-exposure, and there in Mabel's lap, wonder of wonders, majestically sat my neighbor's cow, "Madge". Madge seemed thoroughly contented, as she had a right to be, for such lounging places are not enjoyed by the commonality of cows, and Madge seemed to realize it.

"What do you think of that one?" my neighbor burst out, slapping me

on the back in glee. I was just going to tell him of the cow's unwholesome presence in the view, which I thought he must have overlooked, when he laughed it away himself:

"Old Madge there adds a little touch of rusticity." And he laughed good-humoredly. I am glad he laughed or something dire might have happened.

I am making enlargements now from my neighbor's films, cow and all, and he has purchased the best frames I have in stock for them. He says he is going to hang them in his front parlor. Fortunately when we visit them we seldom sit in the parlor, and my wife vows we never will if she can prevent it. She says I am quick-tempered and she dislikes to see me "het up". Perhaps, she is wise. There are times when I show militant tendencies, but I have always thought myself very calm except when unduly provoked.

To put all joking aside, however, I am still thinking of my neighbor's photographic prejudices. They would be less interesting if they represented his individual stand, but they do more, for they epitomize the public attitude toward photography. Every photographer has met this individual innumerable times, with his enthusiasm and his love of kin, and few of us have taken the tip from him. We go on absorbing new ideas in lighting and posing, experimenting with new kinds of paper, worrying over toning methods, and the like, and disregard the great lessons of amateur photography. I am not the one to blame amateur photography for the position of the profession. On the contrary I believe it has risen by its own merits. It is always fascinating, gives opportunity to the individual fancy, and opens an outlet to the creative instinct that reposes in every breast. It affords the professional the very best opportunity to discover the public taste in photographs, and to profit by it. Like every other merchant the photographer must study his consumer-market. He has got to size up his business with the eyes of his patrons and see what they like in the way of photographs. It is what they like that they are most willing and anxious to pay for. It is what they *want*, and so becomes a kind of necessity with them—and if we want a thing badly enough we are going to have it at any cost, and our will acts. As I have tried to show, the photographer invariably puts his emphasis upon technique,—too often he puts too much emphasis there. Of course technique counts. The public will not excuse slipshod amateur-like work from the professional who pretends to pose as an expert. They take it for granted he understands thoroughly the handling of his tools, just as they expect it of a carpenter before he hangs out his shingle. But,—and this is the point of my paper,—good technique should not be an end in itself, but a means to an end. The thing which interests the public in portraiture is not primarily the lighting of the subject, or its background, or the mount it is on, or its tone, though all of these things may be admired. Its end as evidenced by the amateur's enthusiasms, is to capture the subtle something which constitutes personality. The little shades of expression, or pose which reveal the inner man and bring him vividly before us in all his charm of individuality. "It's a living likeness of her," my neighbor exclaimed in this narrative, and the whole story is summed up in his expression.

We need a new school of photographers, who will put the drawing of per-

THE AMATEUR'S DARK-ROOM

sonality before the mere machinery of making photographs. Far from being unprofitable as this kind of photography is erroneously described by the unthinking, it is the very kind of pictures the public most keenly desire and are willing to pay for. "Bread and butter photography" is a better name for it. But this is the kind of photography that demands artists, and artists are all too rare. But they are appearing here and there and they are invariably successful photographers, because they understand their public and meet its needs in a conscientious way. What a day for photography will it be when all photographers realize this, for the photographer at his best ranks with the artist and the author, who alone can immortalize the present. And the photographer, when he sees truly, does it better than either of them.

The observer needs not only to know what to look for; he has to learn how to see. It is not enough to search for beautiful combinations; there are so many of them in the fields, the woods, by the riverside, and even in the streets, that they would simply bewilder by their abundance if regarded merely as a succession of pictures, and one would in that case derive no more benefit from one's walks abroad than from a hasty visit to the Royal Academy. It is therefore necessary, besides looking for beautiful things, to seek the essential principle that makes them beautiful.—ANTONY GUEST.



The Amateur's Dark-Room

By W. H. Wilcox



With an Illustration by the Author

In his efforts to do serious work the average amateur photographer is handicapped through having no specially equipped dark-room. He usually waits until after dark, obtains the use of the kitchen sink or table, brings from various hiding places his bottles, trays, and other paraphernalia, and there does his developing and printing. While some excellent work, even prize-winning pictures, are produced under such conditions, many of us require more convenient facilities, and I will describe a few helps which I have originated and am using with such satisfaction that I think they may be of interest to other amateurs.

In most houses the bath-room is the one which can be most readily used for a dark-room when needed. The window may be fitted with a removable shutter consisting of a wooden framework covered with heavy cardboard or other opaque material of light weight. For convenience in storing, when not in use, this shutter may be made in two sections, hinged together if desired. It should be made light-proof by tacking strips of felt or heavy dark cloth over the joint and along the edges so that it will fit snugly into the window frame.

CAMERA CRAFT

For a convenient corner of the bath-room build a cabinet of shelves, using clear, smooth boards from one-half to three-quarters of an inch thick. The

dimensions recommended are approximately thirty inches wide, fifty inches high and twelve inches deep, but the size and also the distances between the shelves may be made to suit one's individual preference or to fit the space available. This cabinet should be firmly secured to the wall and at such a height that the bottom will be about thirty-eight inches from the floor. The front or door of the cabinet is built of three-fourths inch clear smooth boards and hinged to the bottom shelf. One quarter of the distance from its upper end two legs of the right length are hinged to this door so that when dropped it becomes a work table. Thirty-eight inches is a convenient standing height for this



CABINET WITH DOOR FORMING TABLE

table for the average person, but it may be raised or lowered to suit the individual. If the table is desired longer than the height of the cabinet it may be made five or six feet long, the extra length extending above the top of the cabinet when closed. My table is six feet long and is found to be a very good size. The accompanying picture shows this cabinet and supplements the foregoing description. At the left is seen an additional stack of shelves which are very useful for holding various photographic supplies. The woodwork may be painted or stained and will thus be less objectionable to any hostile member of the family. An amateur who is not handy with tools can doubtless find some carpenter friends who will make the shutter and cabinet in exchange for photographic work.



MY PRINTING LAMP BOX

I want also to describe an electric-lamp box which I use for the printing and development of gaslight papers. It is very easily made, and with the accompanying photograph will need but little description: Get a light wooden box

THE AMATEUR'S DARK-ROOM

about six by eight by ten inches, preferably a dovetailed one, obtainable at any drugstore. With a knife or coping saw cut out the greater part of the bottom and one end, leaving enough wood in the corners to prevent the box from collapsing. In the other end cut a slit one-half inch wide toward the center from the bottom, to receive electric light cord, so that the box will hang squarely from the cord with lamp-socket and bulb just inside. The bottom as the box now hangs, and the open side (originally the top) are to be covered with red tissue or post-office paper. In use I hang this box so that the bottom is about six inches above the table with the open side toward the right, in front of which opening I place the printing frame supported on a box to bring it level with the light. Under the lamp is the fixing bath in a large tray, and to the left is the developing tray, both well-lighted by the two ruby windows in the bottom and left side of the box. I fill the printing frame on the left end of the table where the light from the open end of the box does not reach with sufficient strength to fog the sensitive paper. A refinement in this box is the attaching of a cardboard screen for protecting the eyes from the direct rays from the red light, which may be folded over the box when not in use. A sixty or one hundred watt lamp is a convenient size for printing, and the lamp cord should be adjusted so that the box will hang at the right position over the table. It may be prevented from swinging by a string from the corner of the box to a hook in the nearest wall.

To those who appreciate the importance of clean and dry fingers when handling gaslight papers and negatives in filling the printing frame, the following suggestions will be helpful: For keeping the fingers almost entirely out of the solutions when developing prints I use a swab of absorbent cotton fastened with a small rubber band to the end of a glass stick made by cutting a half-inch strip eight or ten inches long from a scrap of plate glass, the sharp edges being then smoothed with emery paper. To immerse the prints thoroughly in the fixing bath I use a similar swab on the end of a stick of wood. When through developing, the cotton should be slipped from the glass stick and destroyed, but the fixing swab may be used repeatedly. By this method only the tips of the thumb and forefinger of the left hand touch the developing solution, and then only to transfer the print to the fixing bath, while the latter need not be touched by the fingers until the prints are ready for washing.





Determining the Selling Price

By J. G. Boyd



With Illustrations by the Author

In the conduct of nearly all small business ventures, a logical and comprehensive method of calculating rational selling prices is all too frequently ignored or not understood. It is, perhaps, not too much of a strain upon our imagination to believe that such specific ignorance is more often than otherwise the principal if not sole cause of financial disaster.

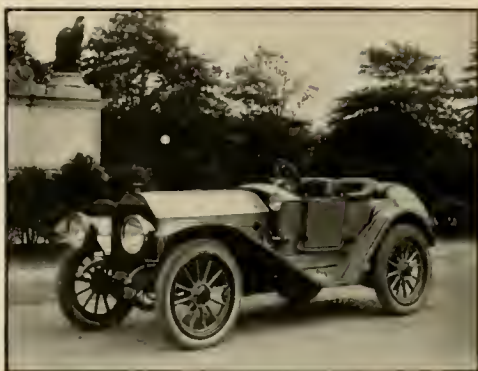
"Scratch a fact and you'll find a mystery" is a truism of almost daily application. Photography has been classified as being in the "specialty" branch of Commerce. Ordinarily, a relatively small investment in this industry does not warrant the employment of even a fairly high priced accountant who, among his other qualifications, is competent to intelligently calculate correct selling prices when the initial cost price is given. The correct method of ascertaining that factor is not particularly difficult and is well within the capabilities of a fifth and sixth grade pupil in our public schools. While some investigators may find some detail set forth herein to be not exactly to their individual liking, yet, taken as a whole, the method given is of present day application in many representative accounting departments.

The conduct of a photographic establishment is one of the prominent examples of small business investments wherein, according to the standard under consideration for determining selling prices, a quite erroneous method of sale price accounting is very prominent. For example: Assume that a certain photographer has calculated by an alleged erroneous method of calculation, that the cost price for a dozen pictures is, say, two dollars, and that he desires to realize a profit of fifty per cent thereon. In arriving at his selling price he is quite apt to figure that fifty per cent factor as being one dollar, and that that amount added to his assumed cost of two dollars dictates a selling price of three dollars. Such a deduction, according to elementary arithmetic, is obviously quite correct, for one dollar is, most assuredly, fifty per cent of two dollars, but is that method of calculation correct according to modern standards? Apparently it is not. Suppose we analyze a bit.

It certainly requires considerable good, hard coin of the realm, to properly conduct any kind of business, be that business great or small. In one instance it may be a popcorn stand, in another a National bank, yet the underlying principles are exactly the same in both cases. Certain fixed and variable expenditures are, in each extreme instance, unavoidable. True, they may vary somewhat in extent in different ventures but their general application is held to be present in all.

In no case, perhaps, is it entirely correct to assume that true cost price is

DETERMINING THE SELLING PRICE



COMMERCIAL PHOTOGRAPHY SHOULD BE CLEAN AND CRISP

covered by adding together, say: rent, wages, materials, heat, light and water. All such items must, of course, be included, but are there not additional items of expense of very material importance, not covered thereby? Assuredly, yes! Then arises the natural inquiry, of what additional items do they consist? Are they speculative or basic? They are basic! Suppose we term them "fixed charges" and define that term as implying expenditures which would continue to pile up financial obligations against the property, no matter whether or not the property was operating. If that definition is justified, do we not at once observe that, clearly, they are not speculative, whatever else they may be.

The smaller the business venture the less apt we are to find fixed charges given any serious consideration when determining costs. This omission, as I have said, is believed to be largely due to the lack of proper accounting. Fixed charges and their non-inclusion in cost items are, undoubtedly, the underlying cause of more commercial disaster than is any other factor that may or may not be responsible. Therefore, if this statement be even approximately correct, should not the "Boss" set his fifth grade offspring to work establishing the magnitude of their application to his individual business? Or, better still, forego attending the movies some night, or decline that pinochle invitation, and devote the time to carefully studying their asset worth! Remember, please, a "pious" regard for their intelligent inclusion in cost accounting may prove the one factor essential to financial success.

CAMERA CRAFT

We have accepted as our definition of fixed charges, those expenditures which will continue to pile up obligations against the venture, operating or at a standstill. Then arises the further question as to what charges or obligations are rightfully included. The list varies somewhat in certain instances, but in practically all it covers: Interest on investment, depreciation, sinking fund, maintenance, and taxes and insurance. There may be other items, but these will, probably, be found in every case.

Interest: An expense, it is believed, too self-evident to require further comment.

Depreciation: This covers the amount "charged off" each year, whereby the original cost price of the equipment is decreased annually to a degree dependent upon the per cent so charged off. Suppose, for instance, you pay, say, one hundred dollars for a camera and stand, brand new. Certainly, if you undertook to sell it after it had been used a year, you would not receive its original cost price. The amount you did receive, subtracted from the cost price would show the "depreciation" even though the apparatus might really be in as good operating condition as it was when originally purchased. Each year its re-sale worth becomes less and less. Now, each must, for himself, determine just what sum shall be charged off each year. Assume, if you please, that he elects to charge off eight per cent annually, then, in that case, after the expiration of twelve and one-half years, he has recovered his original cost.

Sinking Fund: Some accountants maintain that, where full depreciation is provided for, the item of sinking fund should be excluded. Perhaps, yea, perhaps nay, depending upon your individual view point. Here is one such seldom touched upon; in fact, one that has never been in evidence to the writer. You have, let us say, made your investment. Later on, you find another excellent opportunity to start a second plant, but lack the necessary capital. Plant number one, owing to modern method of accounting employed therein, is a nice paying business, and you are exceedingly desirous of opening up number two. You, being well and favorably known to your local people, finally approach an investor with the request that he supply the necessary funds. An agreement is arrived at whereby he furnishes you with, say, two thousand dollars on ten year bonds at five per cent interest; but, he exacts that you set aside each year an amount equal to ten per cent of the bonds, for their redemption. This understanding is of course clearly set forth, and, unless you agree thereto, he will decline furnishing the money. This provision for the redemption of the bonded debt is known as the "sinking fund;" and, if it be so essential when another furnishes the money, it is equally so no matter who provide it, even though it be yourself. And this matter of a sinking fund does not conflict with the item of depreciation, as depreciation takes place irrespective of the source of the funds employed. Therefore, why should not both depreciation and fixed charges appear in the schedule?

Maintenance: This item covers repair of apparatus necessary from time to time in order to keep the physical property up to its original standard of operating excellence. The amount to be set aside for the proper covering of this item varies greatly in different cases; and, while some are and others are

DETERMINING THE SELLING PRICE

not, careful in the handling of their apparatus, this item, estimated accordingly, is a just one in every case.

Taxes and Insurance: These, like interest, require no comment.

Now, to apply these factors, we must assume or estimate a definite value for each. Then, with all values set forth opposite their respective items, it is easy for one to change any or all of them to suit their individual case. Let us assume that the investment is two thousand dollars. Interest we will set down as six per cent. Depreciation has already been fixed at eight per cent, and sinking fund at ten per cent. Maintenance, we will assume, is two per cent, and taxes and insurance, jointly, three per cent. By adding these together we have a total of twenty-nine per cent. It may be incorrect to charge this twenty-nine per cent against the total investment of two thousand dollars, but doing so, we may be guilty of only a small excess charge, a matter of no serious moment to our individual pocket book, an inaccuracy easily corrected when our venture has been conducted sufficiently long to permit of accurate actual factors.

Twenty-nine per cent of two thousand dollars is surely five hundred and eighty dollars, and this last, divided by twelve, gives a monthly fixed charge of forty-eight dollars and thirty-three cents. Bear in mind please, no wages or other operating expenses such as rent, light, fuel, water and the like, are included in this amount, but must yet be added to this item of fixed charges. Suppose the "Boss" credits himself with a salary of one hundred dollars a month, and a first and second assistant be employed at sixty and forty dollars respectively. Then, this total of two hundred dollars must be added to our forty-eight dollars and thirty-three cents, making a joint total of two hundred and forty-eight dollars and thirty-three cents. Suppose we find rent, water, and light cost fifty-one dollars and sixty-seven cents, we have a grand total of fixed charges and operating expenses of three hundred dollars per month. Assuming that the average receipts for a like period amounts to nine hundred dollars, on dividing three hundred by the nine hundred we find "overhead" charges to be thirty-three and one-third per cent of our income. For the time being, the cost of materials, chemicals, etc., are omitted, which enables us to apply this exhibit to the case of the two dollars plus one dollar, mentioned in my third paragraph. We have found that, omitting cost of materials, it costs us thirty-three and one-third per cent of our gross income to do business. Therefore, whatever profit we desire must be added thereto. Assuming if you please, that a net profit of twenty per cent is desired, that desired twenty per cent added to our previously determined thirty-three and one-third per cent gives a total, omitting the fraction, of fifty-three per cent. To determine our selling price for an article costing two dollars, and upon which cost price we desire a profit of twenty per cent, we consider for a moment that our selling price is, obviously, one hundred per cent, and therefore, we subtract the fifty-three per cent overhead from one hundred per cent selling price have forty-seven per cent to cover our sales price. Dividing this two dollar cost by forty-seven, we find our selling price will be, substantially, four dollars and twenty-five cents. This provided we are satisfied with a profit of but twenty per cent of our cost price of two dollars. To prove: Our cost of doing business, our "overhead expenses,"

we found to be fifty-three per cent of our gross receipts. Therefore, fifty-three per cent of four dollars and twenty-five cents is two dollars and twenty-five cents, and that last subtracted from the former, gives us back our cost of two dollars. Can you discern anything wrong in this?

The photographer must, provided he wants to amass a competency, devote attention to proper accounting. Nothing elaborate, complicated or expensive, is necessary; but he must keep tabs on his purchases and his earnings. He must ascertain, at stated intervals just how he stands. He must know the cost of chemicals, paper, plates and other material in order to correctly estimate his "factory costs." In the example above given, the two dollar factory cost includes only plates, paper, retouching, chemicals, mounts, folders and the like, and be sure to include all used. Wages, rent, etc., are included in the overhead expense. Having once ascertained this last as well as become posted regarding his fixed charges and operating expenses, in other words, determined his "overhead expenses," it is a simple matter for him to calculate what his sale price must be in order that he may realize a certain net or clear profit. A little painstaking delving into these details will do more to eliminate this assinine seventy-five cents and one dollar style of commercial work than all the talk and profanity that can be poured out against it.

This screed is not held to fully cover all the details, but is designed to be suggestive only. If it but causes one hard working photographer to grab his pencil and figure a little, that much, if no more, good will be accomplished. Correct price accounting is vital; get your pencil and "Git Bizzy."

Composition is an underlying quality that adds to the beauty of a picture without being itself much in evidence. Many achieve it almost unconsciously as a result of an intuitive feeling for the grace or impressiveness of line, or the balance of masses; but there is no reason why the arrangement should not be calculated, if the effort is not apparent.—ANTONY GUEST.



At Home Portraiture

By John A. Schreurs



With Illustrations by the Author

In response to the request from the Editor, I will contribute a few suggestions as the result of my experience in home portrait work. While there have been some photographers observant enough to see the opportunities developing in this new field and to take advantage of the changing conditions, others have failed to do so. The field is so much broader than that of studio work and the contact with new conditions at each sitting adds so greatly to the interest, that one does not so easily fall into tiresome routine. My remarks may also tend to warn the studio worker that there are patrons who may be overlooking his place of business, patrons that he thinks should enter his door who are having the home worker come to them.

The demand for home portraiture is a step in the evolution of photography, perhaps as a result of the use of the hand camera in the home. The problem of the average studio has been, for the last twenty years, to create, a demand for pictures and to get the people interested therein. Ticket schemes and premiums have been a detriment to the fraternity and they have decreased, rather than increased, the indifference of the desired sitters.



HOME PORTRAITS MAY HAVE THE BEST OF QUALITY

The improvement in type of the homes of today are such that it is possible to find many excellent places for good portraits in almost any residence. The first home pictures were made by the so-called amateur, yet crude as they were, were highly prized and talked about as having a home naturalness about them entirely lacking in the ordinary studio productions. The wide-awake professional could not help but view this tendency with apprehension, but it was futile for him to cut prices in an effort to counteract it. It was not so much the lower cost as it was the more natural though crude results, as the cost of the amateur productions was really more than at the studio. The amateur is improving and so is the professional, but the latter cannot afford to let the home work get away from him.

Some photographers have blamed their lack of sittings at the studios, to the placing of kodaks in so many homes, but no small number of kodak owners are finding out that to make a "bum" portrait is easy, while numerous others who do not themselves own kodaks are learning that they can really be made to look quite "fierce". They go to the studio when a good portrait is wanted and appreciate the work of the profession all the more. And the materials we professionals now have at our command. Look at the reproductions of Mr. Brady's Civil War pictures, made with the cumbersome wet plate paraphernalia then in use and imagine, if you can, the work it must have been to get the fine results he secured. These pictures should inspire every worker, from the humblest to the most proficient, to do his best. Some day the photographic fraternities of the nation will place the name of Brady at the head of the honored list.



A PLEASING HOME PORTRAIT

Despite the existence of this inviting field the man with a studio has not encouraged the demand for home portrait work. Perhaps he has been too busy with small, unimportant details about his place; perhaps he has said in his haste, "No good portrait could be made except under a skylight," and perhaps he has simply been too lacking in enterprise and initiative. But

AT HOME PORTRAITURE



CHILDREN ARE MORE EASILY HANDLED IN THE HOME

there is being evolved a new type of photographer, the home worker. Ere long we will see advertisements for home portrait operators at fifty dollars per week. Home portrait work is making some noise, prices are good just now, and the enterprising photographer should get into this field while the tide is high.

The proprietor of one studio, located in a Chicago suburb, knows that three thousands dollars worth of business that he might have had, was pulled out of his territory by a Chicago firm that specializes in home portraiture. And the firm is still after it, employing a home operator who has acquired great skill. Still, a lot of the work turned out today is semi-amateurish in its three dollar lens effects, helped out with a flashlight. It shows, on the part of the worker, a lack of knowledge as to where to find a lighting and the ability to know it when found. But to the man equipped with a good working knowledge of portrait photography, home portrait work presents a great field. The man who loves his work will always render good service, and what, after all, is business but the serving of one's fellow men, the being satisfied only in delivering his best.

But let me get down to a few practical suggestions. When one goes to a home to make pictures he should not carry a lot of backgrounds to be bothered with; he should use the accessories he finds in each home, and not many of those. Home portrait work must necessarily be different from studio products, but that is not the only reason why people want it, the convenience of having the photographer come to them shares honors with results. These are the talking points in soliciting this class of work,—the pleasing results secured and the convenience to the patron.

CAMERA CRAFT

Avoid a camera-case look in your equipment by using a suit case. Use plates sensitive to red and other dark colors, as they predominate in interiors. Have a long tubing attached to your silent shutter, and use it along with a hatful of patience. The quality of your work will govern somewhat, the price you can ask, but fix a limit and do not deviate from it; say fifteen dollars per order at the start. Home portraits are at present for the few, and, if you can make those in the best homes and please your patrons, success is yours.

If you have a studio and find this work going elsewhere, advertise the fact that home portraiture is in your line. Then, even though you may have a Seavy window background and you can produce good results therewith, try and find pleasure in making this new kind when it is wanted. Make opportunities to show your work, and with it, impress upon the possible customers the advantage to them of having the photographer come to them, of having their pictures made where their own home surroundings give them added value. A good plan is to have a number of albums of selected samples of your work and leave one at each of several homes of likely customers for one or two days. You will then have, in collecting them, an opportunity to call yourself or send a representative to emphasize the many fine points of your work and the advantages of your methods of making such pictures. The one problem of the home portrait worker is to have his work seen, not having a display window as has a studio. Yes, have your automobile in which to go to your appointments; it looks prosperous and is enjoyable.

A good appearance and a self-reliant manner about your work will do much to place your services on a par with that of the professional in other lines, and will also tend to inspire, in the mind of your sitters, that confidence that is so conducive of satisfactory dealings. People have to be talked into parting with their money for pictures, they appreciate an excuse for getting them; so keep posted on what prominent people are doing and find in their activities a reason for their having a pleasing portrait of themselves made by you. Remember that you are living your life at the rate of a thousand miles an hour, so don't wait too long for someone to summon you to do work for them to the amount of fifty or more spendable dollars. Show your proofs in as neat and as "different" a way as you can devise and insist upon the return of all of them.

I may be thought presumptuous in addressing the advanced workers, some of whom are possibly more advanced than myself, but there must be others who, after years in a studio, are anxious to take up the new plan of making portraits in the home, who are only too anxious to tackle uncertain lights and doubtful exposure, and find a method of development suited for both. Studios in Chicago now send operators to any city of good prospects, operators who make the sittings, forward the plates, leaving the rest to be done through correspondence with headquarters. This shows the wideness of the field, a field that the local men should not overlook or fail to cultivate.

A final word regarding composition. The light must come from one point of the compass, affecting all objects proportionately, and one atmosphere must envelop and surround the whole.—JOHN C. VAN DYKE.



The Half Way

By Sigismund Blumann



Thanks to the Editor, a letter from a fellow subscriber has been referred to me. It is an inspiring bit of personal confession and so like several that have come to me during the past year that it may be accepted as typical. The writer of it complains that when he merely snapped whatever pleased his eye, and kept snapping, patiently, persistently, and extravagantly, he had, at the end of each month, a picture or two which was good; the law of chance doing more for him than his later studied efforts; that the pictures so obtained pleased his uncultivated tastes better than did his more careful attempts with a semi-culture. In short, that the more he read and studied and worked the less pleasure he derived from his camera, till now the pursuit has been dropped in discouragement and one of the pleasures of his life has been lost. The complainant avers, furthermore, that the mass of writing on composition, art appreciation, and so forth, has not taught him to compose or appreciate nearly so much as it has bred in him a pessimism of matters photographic.

Let us beware of passing this indictment with scorn or as a casual matter of little importance. It is closely related to the enjoyments of thousands and means hours and hours of pleasure gained or lost and thousands of dollars of profit to those concerned in the sale of photographic materials and photographic literature. And the fault lies with the writers of books and articles as much as with the amateur. We have, in too many cases, been didactic, pedagogic, at the cost of being human. We, and by we I mean those of us who write for the photographers, have adopted the stock phrases of art without in most instances, having imbibed the spirit of those phrases. They, these last, therefore, naturally appear as empty to our readers and they are so to us. Our efforts have too often been to display our own erudition rather than to enlighten others. We have been too ready to appear as wonderful critics, with epigrams and aphorisms, and have failed to be helpful. As a matter to the point, let me say that a page and a half from the pen of Porterfield,—telling how he made a picture, why he made it so, and what it would have been had he not proceeded as he did, was more useful and did more good in a psychological way than all that the wise and learned writers on Composition, Light and Shade, and so on, have given forth in decades.

Now, I am not belittling the value or need of knowledge of technique. But this is so plain as to be Rooseveltian in its prolixical truism: It does no good to know how to do a thing if you haven't anything to do. An Irish bull, if you will, but listen.

What good should every rule of language, rhetoric, prosody, and a complete knowledge of the dictionary do you, if you had no ideas. What is to be gained from all these deep, comprehensive dissertations on Art when the soul, the vital essence, is missing. We are simply proving to the rank and file of

CAMERA CRAFT

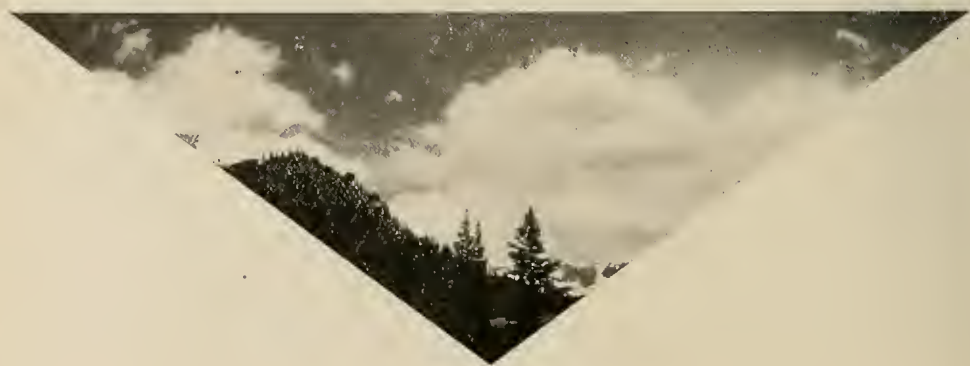
camera users how deficient they are, we are taking away a confidence of innocence without supplying a courage of inspiration.

Of course the greater fault lies with the amateur who reads and thinks he studies what he reads, and in fact gets only the husks. A little knowledge is a dangerous thing. An old boxing instructor once told me that many a fine, natural fighter is spoiled by half a course. No doubt many a natural artist is rendered innocuous by the first few years of instruction. The newly planted tree dies or seems to die for the time, but, gaining strength and sending its roots deeper into the new soil, it revives and thrives. This correspondent who has given up his hobby because he has learned to see the weakness, the deficiencies of his work, has made one big stride ahead and then laid him down. The next step is to make such pictures as will come up to his cultivated ideals. If he no more gets a good negative from shooting his camera like a blunderbuss loaded with BB shot, trusting to luck and happening on something once in a while, why, he is in pocket. And the pleasure he shall derive from having intentionally made a really fine picture, though it be but once in a year, shall compensate him for the questionable delight of getting something by a hit or miss method. Unless the faculty exist within of doing a thing well, and the spirit of wishing to do it well, he is none the worse off for laying his camera on the shelf and adopting another hobby,—say shooting dice. But the very fact that he has reached the stage of discontent proves the talent there and should nerve him on to finishing the job. Believe me, that mind which has reached an altitude from which it can impartially view itself, is no mean one. The critic who can see his own defects is some critic. And the artist who detects his own weaknesses is on a fair way to real attainment.

To the writer of that letter this word of cheer: Take your camera down and put it in condition. Think out something definite to do with it. Plan something, something fine. Then go to it. God only can be helpful to the fellow who, smugly contented, goes on snapshooting and is unchangingly pleased with his spoils. What God does is to make such useful,—to the dealer in supplies.

To maintain the traditions, this brief peroration:

From the ashes of half-knowledge,—which is discouragement, shall arise to the worthy a full fledged ability that comes of complete knowledge. Phoenix reincarnated.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

USING SLOW PLATES: Some weeks ago my dealer sent me, by mistake, a dozen slow plates of my favorite brand. I kept them, thinking they would come in handy should I have a black-and-white subject for copying. Last week I wanted to make some landscapes and thought I would use up these plates and get them out of the way. The ease with which they developed into good negatives, despite the fact that the exposures given were rather erratic, and the fine quality of the detail and the entire absence of fog or veiling was a delight to the eye. Hereafter I will use these slow plates wherever possible. Years ago we were constantly advised to use as slow a plate as the circumstances permitted, but it seems that the advice was so universally disregarded that it ceased to be offered. But let one make the experiment that I did and the advice will stick in his mind.—W. E. R., Tennessee.

SUNLIGHT EFFECTS: There is a portion of my garden in which, at a certain afternoon hour, there is a delightful play of sunlight and shadow. Several times I have exposed a plate upon this scene, and, although each successive result was examined and studied, I could not determine just why the picture never had the "feeling" of sunlight that the scene itself presented. The other day in trimming one of these prints down to fit a certain space on a mount, I trimmed away the entire sky portion; and behold, the sunlight effect was at once secured. I tried the experiment of covering up the sky portion of other like pictures and found that there was much improvement. The hint may be worth something to others.—O. S. A., Florida.

IMPROVING THE NEGATIVE: One frequently has negatives that could be greatly improved by the addition of some retouching to strengthen or build up rather indistinct or missing lights. True retouching may be beyond the skill of the worker, but if he will flow the glass side with a celluloid varnish he will find that quite crude work will be effective, due to the thickness of the intervening glass. For broad masses it is best to use a little of the powdered lead, applying it with an ordinary paper stump such as are sold at art stores and the like. The varnish, which dries quickly, is made by dissolving ten grains of celluloid in each ounce of amyl acetate and then adding an equal bulk of methylated or denatured alcohol.—T. G. B., New Mexico.

PHOTOGRAPH THE CORNERS: The average amateur, when he wants to get some views, let them be either about the home of a friend or about the street of his own or some other town, avoids the inclusion of the corner of a building or the corner of a street as a feature at all prominent. He does this, perhaps, through a fear that the part of the building so shown will have a cut-off effect. This is a mistaken idea, as a few trial exposures will prove. All

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of my own street scenes show a part of the corner building on one side of the foreground and when I wish to make some views of a friend's place I usually include several of these "corner" effects, particularly when there is a path or other opening at that point. The corner of the barn, the corner of the garden, in fact, various kinds of corners, will often prove as interesting as those of the residence itself. True, these corner views require a small stop and too much of the near side of the building or fence should not be included, but the resultant pictures are quite often about the most interesting that a given locality affords.—E. D. C., Vermont.

USING A REFLEX CAMERA: The user of cameras of the reflecting type must not overlook one important point if the instrument be a new one in his hands. The several makes of these instruments, and perhaps those of the same make to a slight degree, vary as to their quickness of response to the first effort put forth to release the shutter. One camera may respond as if equipped with a hair trigger, while another may be patterned after the release of a pile driver. It is hard enough to learn to anticipate, as it were, the proper instant for pressing the button or other release of a given camera of this type, but in changing to another instrument a little preliminary practice should be indulged in or one may find all his moving objects have moved entirely off the plate,—as I did upon a recent occasion.—E. T. R., Washington.

DANGER IN DAMPNESS: When prints on developing paper are inclined to be veiled or fogged, the difficulty is sometimes due to too much moisture having been absorbed from a damp atmosphere. I worked for some time trying to locate the cause of my trouble with some developing paper that I was using a few months ago, and finally gave it up, placing the package of paper on top of the printing box beneath which I expose my prints. Later I thought I would again try the paper; and doing so, had none of the original trouble,—the paper had simply dried out. Since then I have been able to avoid a similar experience by seeing that my paper was kept in a fairly dry place.—W. E. R., Tennessee.

HYDROQUINONE STAINS: Metol being unobtainable I was compelled to use hydroquinone alone; and, not taking proper precautions, got some nicely stained negatives. Stain removers intended for pyro failed to have any effect but I found that a weak Farmer's reducer did the work. This is made by taking the desired amount of clean, plain fixing bath and adding to it just enough of a solution of red prussiate of potash to give it a very pale yellow color. The negative must not be allowed to remain in even this weak solution too long or the image itself will be reduced.—F. G. H., Delaware.

AN IMPROVISED FINDER: When one has some hand camera exposures to make and his finder has been left at home or misplaced, let him look about for a piece of card such as an old paper box lid or an advertising card on the fence. From this cut a rough imitation of a letter H, so proportioning it that the two lower stems will embrace the bellows between two folds while the other two upper ones will allow the view to just come between them when the eye is placed at the center of the top of the camera back.—F. G. H., Delaware.

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A PHOTOGRAPHIC MONTHLY

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Price-Cutting Does Not Pay

About six months ago a photographer from the East came into our office to ask concerning a possible location here on the Coast. He had, before coming out, placed an advertisement in our pages, and had received a number of replies, several of which he had investigated. We gave him all the information we could but he had practically decided upon opening a new studio in a town in which he had found the two leading photographers engaged in a price-cutting contest. He reasoned, from observations made in like cases back East, that neither of the price-cutters ever won out, but that a third man who was not in the fight always came out ahead. He would be the third man in this particular instance, as neither of the two other photographers there could be considered as dangerous competition. This week he paid us another visit and announced that the result was just as he expected. One of the price-cutters had moved away and the other was practically out of the running as far as the better trade was concerned. He, our Eastern visitor, had become the leading photographer with one of the former second rate men leading the field a safe distance behind. In this little incident there is a lesson for the man who contemplates cutting prices. Business today, even more than in the past, is a matter of giving better service. Particularly is this true in the business of photography, the product of the photographer being more in the nature of a luxury than a necessity. Service means good work, good treatment and good methods. The photographer must be a good craftsman, must have a good personality and he must be systematic and business-like. The man possessing these requisites rarely if ever turns to price-cutting in order to secure business,—he does not have to resort to such methods. The man whose work is not up to standard, the one whose personality is not just what it should be, and the man whose methods are faulty, these men turn to price-cutting to supply the deficiency; but it never works out except in a very, very few cases where conditions are most favorable. Had not our Eastern friend stumbled into the town where the price-cutting war was on there is a possibility that the one who remained after the other withdrew might have retained his position as the leading photographer simply through the inability of either of the other two to aspire that high. But it is only a chance; the field would have been too inviting for some outside photographer not handicapped by a reputation for low or cut prices.

Photography at the Hilo Fair

As announced in our July issue, the Hawaii County Fair, held in Hilo, Hawaii, September twenty-first to twenty-fourth, included a photographic exhibit for professionals and amateurs. Through the efforts of C. S. Carlsmith, Chairman of the Photographic Section, there was a special contest opened to members of the I. P. A., and three prizes were offered. The first prize con-

sisted of ten dollars in cash and a ribbon, the second a medal and ribbon, and the third a white ribbon. Quite a number of members exhibited and not a few of the pictures submitted by them were of the highest class of pictorial work. The judges were Dr. J. S. Pratt, President of the Hawaiian Board of Health; Major D. S. Bowman of the United States Army, and Mr. Twigg Smith, a lecturer in the Chicago Art Institute. Dr. Pratt and Major Bowman are experienced photographers, while Mr. Smith is both an artist and art critic. The first prize was awarded to C. A. Heald of San Dimas, California; second to T. J. Bones of Los Angeles, California; and the third to C. E. Fey of Laramie, Wyoming. Some noteworthy exhibits were the work of S. T. Dent of Philadelphia; Orrin Dudley of San Anselmo, California; H. Crosby Ferris of Denver, Colorado; Arthur Van W. Eltinge of Syracuse, New York; the Howes of Louisville, Kentucky, and A. Warrington, of Philadelphia.

A Successful Exhibition

Judging from the extended notices given by all the Portland newspapers, the exhibition of the Oregon Camera Club, opening October fourth at the Central Library in that city, was a noteworthy achievement, a success in every sense of the word. Fifty-five of Oregon's amateur photographers, and there are no better anywhere, placed on display nearly five hundred prints. Many of these pictures have won honors at salons and exhibitions abroad as well as in those held in New York and other Eastern cities. Visitors in large numbers attended and the excellence of the work shown, as well as the interest evoked, portends an increased activity along the line of pictorial work, as well as a greater activity in club matters.



A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Permanganate-Persulphate Reducer

A reducer for negatives, which will act proportionately and which is under full control and not erratic in its action, is one of the things for which photographers have been looking for a long time. I believe I have discovered the formula for such a reducer, and I would like to pass it on to the photographic world.

We all know the special characteristic of the persulphate reducer introduced by the Lumiere Brothers years ago, namely, its selective tendency to act upon the denser portions of the image, and a very valuable agent it has proved, especially when used according to the Bennett formula.

But the persulphate reducer has the disadvantage of being erratic in many hands; for instance, a hardened and an unhardened film may behave quite differently in it; in fact, the hardened film may refuse to reduce at all. Some people say that the reducer acts more satisfactorily on an undried negative, and my experience agrees with this; and dried negatives, it is said, reduce more satisfactorily if soaked in water for one hour before reduction.

Others again say that images developed by certain developers are unfavorable to its action.

Then we all know how it may hang fire for some time, and then go off like an express train, and reduction may be carried too far before the negative can be plunged into the sulphite bath.

Again, the persulphate reducer is not proportional in its action, and though its selective action is very valuable when needed, yet a proportional reducer would generally be of much greater utility.

The permanganate reducer, introduced by Namias, in my opinion, is a very valuable one, much more so than the persulphate, and I cannot understand why it has not been more popular. I have not found it to be an unclean reducer, as Bennett avers,

and as far as stains, I have never met with them when using an after clearing bath of potassium metabisulphite.

But when considerable reduction is desired, this reducer has a tendency to eat out the half tones or more delicate portions of the image; this selective action, however, is very small when compared with Farmer's reducer. So, practically speaking, when only a slight reduction is needed, its action may be considered proportional.

The following is the formula I have generally used when employing potassium permanganate:

Potassium permanganate, one per cent solution	100 minims
Sulphuric acid, ten per cent solution	50 minims
Water, to make.....	4 ounces

With this reducer, while reduction proceeds regularly enough, the exact time to remove the negative is not always certain, for the image may get a little clouded with a brown stain or deposit, an oxide of manganese. This, however, absolutely disappears in a clearing bath of one per cent potassium metabisulphite.

It occurred to me one day to try the effect of combining these two reducing agents, when I found to my surprise that the disadvantages of each reducer had absolutely disappeared! I also discovered that by varying the proportions, a reducer was obtained which, as far as the eye could judge, appeared proportional in its action; that is to say, suppose you happen to over-develop a negative, then by subsequent reduction in the following reducing solution, a result is obtained which, as far as the eye can see, is the same as if development had been stopped at the right stage.

This I have tested as follows: Two plates having the same exposure were developed for different times; after washing, the denser negative was reduced in this reducer and cleared, with the result that the two nega-

tives are now almost impossible to distinguish.

Now to enumerate: The action starts right away, and is quite regular, not hurrying up like persulphate alone. It is not sensitive at all, like persulphate, to small traces of hypo from imperfect washing. In fact, with it I reduced with perfect ease a negative in which I could still just taste the hypo. A hardening bath on the film does not interfere with its subsequent reduction in this reducer, the action being regular, though somewhat slowed. As yet, in my hands, it has never shown the slightest erratic action. During reduction it is clearer in its action than the acid permanganate reducer, thus the degree of reduction can be more perfectly estimated. The solution, when in use, appears to keep in working order longer than the acid permanganate solution; and it is a proportional reducer, as far as the eye can see.

The reducer, which should be made up just before use, has the following simple formula:

Potassium permanganate,
one per cent solution....20 minims
Ammonium persulphate....10 grains
Water, to make.....2 ounces

The permanganate is best kept in a one per cent solution, taking twenty-four grains in five fluid ounces of water. The persulphate should be weighed out, or, if more convenient, one "tabloid" persulphate, eleven grains, near enough, may be used. You will notice that the reducer is weak when compared with other formulæ, but it acts quite rapidly enough. After sufficient reduction the negative should be quickly rinsed in water and cleared for five minutes, quite, in one per cent potassium metabisulphite, or in an acid fixing bath, I use the former, and then washed and dried.

Here in the Solomon Islands I have no opportunity for making exact photometrical tests, and so I have had to rely on visual tests only, which may not be quite accurate. If some scientific man like Mr. Renwick or Dr. Kenneth Mees were to investigate the formula, he would probably find that the proportions might have to be adjusted to get strict proportional action, and I think the reducer merits such investigation.

I must say, in fairness, that the tests on which I have based this article are more

limited than I should desire, but I must plead the difficulty of photography in a climate in which one rarely can obtain water under 80° F., and in which photographic materials, when opened, deteriorate so much in two or three weeks as to be almost useless.—Norman C. Deck in *Australasian Photo-Review*.

Exposure In Stereoscopy

Most stereoscopic workers are agreed that a good slide should be soft in gradation, and, in fact, one glance at a hard slide in the stereoscope is enough to prove the truth of the generally accepted rule. But not enough consideration seems to be given to the manner in which softness is secured. Too often the worker relies mainly on over-exposure, which affords the easiest way of arriving at a soft print. This tendency to over-expose is due possibly to the fact that in ordinary single-print photography slight over-exposure is usually adopted by preference. The rule, "expose for the shadows," is very generally followed, but in any well-lighted subject the lights must be over-exposed to some extent if we expose so fully as to bring out all details in the shadows. If we adopt the same rule of exposure in stereoscopy the over-exposure of the lights becomes apparent, while it is usually easy to see that the shadow detail is unnaturally obvious and too obtrusive. Shadow detail is more obvious in a stereoscopic slide than it is in a single picture, and experiment will show that in Nature it is also somewhat more obvious to binocular vision than it is to one eye alone. Plenty of shadow detail in a single picture therefore looks natural to two eyes, whereas the same amount in a stereoscopic slide may appear unnatural in the stereoscope. If in stereoscopy we reverse the rule of exposure referred to, and expose for the lights, letting the shadows look after themselves, we shall, as a rule, get two pictures that look slightly under-exposed when seen separately, but look perfectly natural when seen combined in the stereoscope. To avoid hard prints we must, of course, be careful in the printing not to clog up the shadows, and very usually it will be best to adopt a warm tone process that naturally tends to give soft results. It will be found that the stereoscopic slide will reveal shadow detail that is almost, if not quite, invisible in the separate prints, therefore the prints should neither be condemned nor passed until actu-

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ally tested with a stereoscope.—*British Journal of Photography*.

Paper Negatives For Enlargements

In these days of increased prices and prohibited photography, the amateur photographer has to turn round and consider how he can pursue his hobby at home. What more natural than that he should overhaul his stock of negatives and see how many will be worth enlarging?

The question of the cost of plates for this purpose need cause him no distress or damp his ardor; he can, throughout the whole process, use paper. Moreover, he can make use of practically any and every kind of paper he may happen to have to hand.

And so he may start to work. Let him begin by selecting those negatives that will require no touching up, but that will yield a technically perfect print. These prints will be the "positives" from which the enlarged negatives are to be made. They may be made upon printing-out paper, and need not be toned. They should be printed until they look just right. They are then ready for further work which will be described presently.

He now turns to those negatives that are not quite so perfect, and require spotting and touching up generally. Well, he may leave them alone, and just make his prints right away, but this time he must use bromide or gaslight paper to make them on. If the negative is "flat", he must use gaslight paper; if correct in gradation, but "pinholey," etc., he must use bromide paper.

It is upon these contact-paper positives that he must make his corrections and repair the defects of the negatives.

Should, however, there be a great amount of work to be done, especially if it be of a minute character, this paper positive must be made by enlarging and not by contact. The size of the enlargement may be just that size that seems to him to give him the most scope for his handwork, $6\frac{1}{2} \times 8\frac{1}{2}$, 8×10 or even 12×15 .

Now, having made his positives, both upon printing-out paper and bromide paper, let him prepare them for copying, for that is the method by which the enlarged negative is to be made.

It will at once occur to him that he has almost unlimited possibilities at his command. Of course, the bromide and gaslight papers

must not be of the glossy kind, but of the surface known as semi-matt or matt. They should have been exposed and developed so that they look just right for the album or frame, barring, of course, their defects.

These may be corrected by means of water-colors, pencil, chalks, or india ink with or without the admixture of water.

When as much work as has been deemed necessary has been done upon the prints, they are ready for copying. As all alterations have been made in black and white, they may be copied by daylight or artificial light.

Now, here again use may be made of either gaslight paper or ordinary bromide paper,—matt, of course, as before—but not printing-out paper, since it is not contact work. It will rarely be necessary to use gaslight paper unless the paper positive is very flat, and even then it could be intensified with mercury and ammonia. Exposure and development should be such as to yield a good, strong negative, not with degraded whites, as for contact printing, but with just the same contrast as a perfect enlargement should possess.

This enlarged negative may be of any size, or several may be made of different sizes if preferred; but one convenient size for all is best, as from it any size enlargement may be made, either smaller or larger, by copying.

Upon this negative may be done all the necessary handwork to ensure its yielding the finished, perfect picture. In copying, if the paper positives or negatives are evenly illuminated, no grain will show—indeed, a semi-matt paper has no grain worth mentioning.

Now, upon the negative the worker is not restricted to black and white. A yellow wash will render a sky darker; a red one, darker still; even greens will give a variety of tone. But, generally speaking, black and white work is best as well as more simple.

Here, then, is a process of making enlarged negatives that is both simple and inexpensive. There is even no necessity to use the best brands of bromide papers. Cheap "seconds" are advertised in all the photographic journals, and will prove quite satisfactory. Moreover, the great advantage paper has over glass is that we may alter sizes at will, enlarge or reduce from the same negative, and work upon its surface to an almost unlimited extent, to say nothing of there being no risk of breakage or inconvenience in storing.

Figures in landscape may be added by the simple method of pasting on the print any suitable subject cut from another print.—Sydney H. Carr in *Amateur Photographer*.

Soft Bromides From Hard Negatives

It happens occasionally that a negative gets a little over-developed and prints hard, and it becomes very difficult to get a nice soft result. This defect often arises in hot weather, when developers are more energetic than usual, especially when developing in tanks, or dealing with panchromatic plates in total darkness. One is nervous about reducing such negatives, as there is always a certain amount of risk attending that process. Then the negative may be retouched and varnished, and one naturally wishes to avoid cleaning all the work off; yet the ordinary developer often fails to give a satisfactory print. Amidol as in the usual formula will sometimes give the desired result, as it generally produces a softer effect than monomet and hydroquinone. But even normal amidol may fail, and then some special form of it is needed. I think I have found it in the following:

- A: Amidol 120 grains
 Sodium sulphite 2 ounces
 Sulphuric acid, strong 30 drops
 Water 10 ounces
 B: Sodium carbonate.... 1 ounce
 Water 10 ounces

The proportions of soda solution or B can be varied to suit the negative; the harder it is the more soda may be used, but the developer will soon discolor if much of the soda is added. This developer should be diluted to suit the negative, the more water the softer the print; it may be used very dilute.

The exposure will be found to be very short. A negative needing an exposure of thirty seconds for a normal developer will, perhaps, require only five seconds with this one. It will, of course, be noted that it contains no bromide. The image usually appears very quickly and total development is very short, sometimes not more than a minute before the print is sufficiently developed. The rapidity of development makes it difficult to handle a number of prints at once, but dilution of the developer greatly reduces its speed. One would expect that such rapid development would give prints of poor color, a rusty black for instance, but the

color is a good cold black in the shadows, with silvery gray lights. The print, however, does not seem to tone very well with sulphide, as the whites become very yellow, probably due to the shortness of the exposure and development without bromide.

The stock or A solution will not keep very long, and as it may be regarded as an emergency developer only it is best to make it up in small quantities from time to time when required. It may be thought that so rapid a developer would be beyond control when a number of prints are wanted alike, but by using the developer considerably diluted the speed is reduced, and if only a small number of prints are put into the developing dish at one time it is not difficult to secure uniformity.—H. H. H. H. H. in *British Journal of Photography*.

Photographic Uses of Formaline

Il Corriere Fotografico for August contains a useful article on the above subject by Comirias De Albroit. The writer points out that formaline can be used for gold toning, giving, with printing-out and bromide papers, a rich brown tone, the formula advised reading: Thirty-two ounces of water, fifteen drops of formaline, and one ounce of a one per cent solution of chloride of gold. He states that with this bath the unpleasant purple effects of a cyanide gold bath are entirely obviated. Another use is as a developer, particularly in the case of process plates where extremely clear reproductions of black and white line subjects are required. The formula offered is as follows: Six hundred grains of hydroquinone, forty drops of formaline, and fourteen ounces of water. It will be seen that this developer is free from alkali. Formaline is also indicated as a hardening agent, decidedly superior to alum for plates and papers, for which purpose a strength of about five per cent will be found useful. I would like to add to the above remarks my own experience with formaline as an almost perfect preventative of green stains in autochrome development. For a long time I have scarcely had a single failure in this respect, my procedure being as follows: At the end of development wash the autochrome for one minute in plain water, next immerse one minute in a ten per cent formaline bath, and then wash off the surface fluid and immerse immediately in the permanganate reverser.

THE CAMERAMAN'S PAGE

Edited by Hal G. Hall

A Practical Department of Comment on Methods
and Apparatus

To Do or Not To Do

J. T. W., Lincoln, Nebraska, writes for advice as to whether or not he should take up motion picture camera work or the medical profession, and also as to how he can learn camera work professionally. While we do not know whether J. T. W. is temperamentally best fitted to be a doctor, or a cameraman, or perhaps a lawyer or butcher, the following facts may well be considered by our correspondent or anyone else thinking seriously of taking up camera work.

In the first place the field for the motion picture photographer is limited by the very nature of conditions as they exist and as they will, to a large extent, continue to exist. In the dramatic film business the market for productions is limited by the number of people who are willing to go to see picture shows. And as a cameraman usually "shoots" several hundred feet of film a week, only a limited number of cameramen can possibly find employment in dramatic film production. In addition, it is a fact that, instead of rapidly increasing as in the past, the demand for new films has now reached its limit, and there is at present a state of overproduction; the demand being for better, rather than greater film productions. The time has passed when any film found a ready market. Hundreds of films now lie shelved awaiting opportunity of profitable release, many others barely surmount the strong competition, and only a few dramatic and comedy films are highly profitable. Even with the present overproduction, there are more "crankturners" than jobs. There are hundreds of men who can "run a picture camera", but who are not at this moment doing so because of no demand for their services. While literally, anyone of average intelligence can learn to "run a picture camera", not everyone that can do so is a cameraman, and not every cameraman is now finding profitable employment.

In an early issue we will discuss the definite requirements for the successful camera-

man, but the fact remains that unless one is especially qualified, the chances of successfully breaking in as a cameraman, in competition with those already in the field, are about equal to those of a certain wax dog that chased a certain asbestos cat through a traditional place. Assuming that one is determined to learn camera work, he usually works his way by the laborious service as assistant cameraman,—the assistance consisting mainly of carrying a heavy tripod, camera, magazines and attachments where an automobile cannot go. For this service a small wage is sometimes paid, but so great is the glamour surrounding the work that, here on the Pacific Coast a cameraman can easily get a dozen assistants who will toil faithfully and long for the mere experience. In fact, it is usually extremely difficult to get an engagement as an assistant, even at little or nothing per week.

As for motion picture "schools", some are out-and-out humbugs, while others can only give the photographic principles without giving an adequate instruction in studio practice. A motion picture school cannot incur the expense attending the production of pictures as they must now be produced, and a studio producing real pictures cannot afford to have anyone "around the lot" who is not doing his share in helping, rather than hindering the work of production.

A Portable Laboratory

Something new in developing apparatus was brought to our attention recently. The system uses the same general idea as does the Eastman plate and film tanks that have come into such general use. Preferably just enough developing solution is used to develop one batch of film, although a stronger developer can be used more than once, or a once used developer can be "sweetened" by the addition of more of the active reducing agent.

Designed originally for the use of the cameraman when some distance from the

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laboratory, especially in the tropics where film does not keep long after removal from the can, the Stineman tanks are effective and occupy very little space. Best of all, in view of the present high cost of developers, these tanks use a minimum amount of solution. The fifty-foot tank requires but one-half gallon of developer, and the two-hundred foot tank only two gallons. As no more solution is used than is barely necessary to cover the film, uniformity of results as well as economy are achieved by using pyro,—now the least expensive, and never the least desirable developer,—of just sufficient strength to develop one batch of film.

For use with toners, many of which are now extremely expensive, a chemical-proof, baked, enamel tank and kit is provided. This permits the economical use of the toner, as the necessity of filling a large tank is avoided when perhaps only a few hundred feet of film are to be treated.

The principle of the Stineman tank is extremely simple, consisting merely of a spiral brass frame on which the film is easily wound, after which it is dropped into a round, spun brass tank. If the chemicals are thoroughly dissolved, no further attention is required after the removal of possible air bubbles by gently lifting and lowering the frame a couple of times, as it is placed in the developer.

We have tried one of these tanks and found it to be entirely satisfactory. No difficulty is experienced in using a pyro developer for either positive or negative film, when no effort is made to use it more than once. It would seem that this new tank should prove a money saver in regular laboratory work as well as for locations in out-of-the-way places. Sketches and detailed explanations of this system will be given in another issue.

A New Lens

Cameramen, occasionally compelled to work in confined situations, can now obtain a short focus lens particularly adapted to such cases. The Goerz American Optical Company recently placed on the market a lens of one and five-eighths inches focus, in addition to the usual two inch, three inch and an intermediate focal length. The new Kino Hypar, an uncemented, f-3.5 lens, is the first motion picture lens of less than

two-inch focus having that speed. Accurate focussing is possible at full aperture and good definition is secured at the moderately large apertures most commonly employed. Using the shorter focus lens at the same relative apertures, greater depth of focus is of course obtained than with the two-inch lens. Heretofore, lenses of less than two-inch focus had maximum aperture of f-4.5, and these gave such great depth of focus and comparatively poor illumination that accurate ground glass focusing was somewhat difficult.

While, in some cases, the perspective with the shorter focus lens is not as pleasing as with one of longer focus, the former includes almost twenty-five per cent more angle than does the two-inch lens. This additional angle is frequently of material advantage when the camera can not be removed quite far enough away from the scene on location, or when it is desired to somewhat exaggerate the usual perspective. At times the greater depth of focus of the short focus lens is also desirable.

The Kino Hypar is the shortest focus lens that can be fitted to the Bell & Howell camera and it can also be fitted to most of the other makes without disturbing the shutter.

Translucent Borders

The use of celluloid of various colors for before-the-lens mats permits of a wide range of effects. Red celluloid gives about the same effect as an opaque mat, while light yellow permits a peculiar translucence in the higher lights of the matted portion of the picture. In a coming production, Bessie Barriscale will appear, with two other "Irish lasses", in the trisected opening of a mat cut clover leaf shape from the light yellow celluloid, while many of the other scenes will be vignettted by dark red celluloid mats cut with ragged inner edges. C. DeVinna is the cameraman for this production. In an early issue we will have something to say about mats and irises in their relation to stops and focal-lengths.

No necessity really exists for the custom of using bars, blondes, cafes and red-light for settings for stories and scenarios—better material may be found in the homes, decent clubs and in circles of Christian Science.—Chauncey McGovern.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

The Dealer's Difficulty

When an amateur leaves a roll of film for developing and printing the finisher assumes that he wants the regular thing and that "regular thing" is what the finisher has found to give the greatest satisfaction in the majority of cases, namely, a print quite decidedly on the hard side. He knows that softer prints are more desirable and perhaps tried, at some time in his experience, to convince his customers that they were so, but the frequent appeal for prints with more "snap and sparkle", as one customer explained in my hearing, convinced him that the best policy was to give them what was wanted. When a customer comes in with a roll it is assumed that he has been getting the "regular thing" and so he is given that style of print; in fact, the dealer would prefer to make them all that way as long as the major portion are so wanted. But occasionally a customer will drop in, one who has not by reason of a wrong idea or previous experience in having his work done, acquired the "snap and sparkle" desire, and when he gets his prints he is disappointed. What he should do is to show the clerk a print such as he wants and have it understood that work of like kind as far as the negatives in question will permit, is to be delivered. Of course, if his exposures have been undertimed, particularly on contrasty subjects, it will be impossible to give him prints having the quality of those from fully timed negatives; but, with fairly well timed films he should be able to get good prints entirely lacking in the rather chalky appearance of those so uniformly handed out in compliance with the popular demand. We advise showing the clerk a print, for the simple reason that just what is wanted is rather hard to put into words that mean the same to the clerk as they do to the customer. What one person thinks is a hard print may seem fairly soft to another, and what one man may call a soft print will, to

some other appear so flat as to be out of the question. Almost every dealer has a book of samples showing the work done with different models and sizes of cameras and these prints should serve as examples, and we wonder why it is that with these prints before them the average amateur will complain that the prints handed him from his negatives are lacking in vigor when they have even more contrasty.

Make a Few Interiors

What can be more interesting to the one who likes to use his camera than the making of an experimental exposure or two on an interior about his own home? Too many owners of hand cameras imagine that interiors are out of their field, simply because they do not have a wide angle lens and a view camera. This is a mistake. True, a wide angle lens is necessary if one is desirous of making certain particular interiors, but where one can pick his subject as he can in his own home, plenty of good material will be found that is amenable to the ordinary hand camera lens. Folding doors often permit one to get far enough back to include a generous part of a room in the picture space, and even when one can get only a small portion of a room, by careful selection a most interesting picture is often secured. With the relatively long focus lens the perspective is better and the danger of distortion in near objects is greatly minimized. Even a tripod is far from being a necessity, as a pile of books or a small box placed on a table or other piece of furniture will supply a support for the camera and one that permits of considerable adjustment. Not even a shutter giving time exposures is required. All one has to do is to get everything ready, drape a black cloth over or hold one's hat in front of the lens while setting the shutter open, then withdraw the protection for the required time, returning it and closing the shutter. And do not be afraid of giving too long

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an exposure. Interiors are very rarely over-exposed and it is well worth the trouble to see just how long one does have to expose in order to meet with this experience. Make an interior or two when you have a spare afternoon and want to find something that can be done indoors; it is well worth the time spent.

The Flat and the Roller Squeegee

An Oregon correspondent writes to ask which, a roller or a flat squeegee, we would recommend. Our correspondent seems to have the idea that the two are used for the same purpose, a mistake that is all too common. The flat squeegee is most useful where no great pressure is required, where there is no danger of abrading the surface, as with the back of a print, and where the desire is to rub out all air that might form bubbles beneath the surface, as when putting prints down on a squeegee plate. The roller, on the other hand, is most suitable when considerable pressure is required, when there is danger of rubbing the surface or the face of a wet print, and where the persistence of an occasional small bubble of air is not particularly objectionable, as in mounting. Our correspondent should provide himself with a roller squeegee for print mounting and with a flat one to be used in removing surplus water from a pile of prints, for squeegeeing prints to ferrotype plates; and, if he does carbon work, for the various manipulations therein.

Send For Those Booklets

Now that the winter months are upon us the long evenings give opportunity for reading over and digesting some of the valuable booklets and the like offered by our advertisers. We do not wish to stimulate the inquiry for these among those who are not interested, but we are quite sure that our readers are, in many cases, neglecting an opportunity that they should not overlook. Almost every mail brings us queries that are answered very fully by one or more of these advertising booklets, in fact, the amount of information that some of these little books contain almost takes them out of the advertising class. Take those issued by the Eastman Company and mentioned from time to time in their advertisements; the Cyko Manual of the Ansco Company, "A Short Talk on Negative Making", issued by the Hammer Company; the Autochrome

booklet, obtainable of R. J. Fitzsimmon of New York; the "What Lens Shall I Buy" booklet of the Bausch & Lomb Optical Company; "Iso Landscape Photography", issued by the Cramer people and numerous others. They are all full of valuable information and one can hardly do better than send for those that he feels will interest him. Go through the advertising pages of this issue and write for those you want. Then watch for the announcement of new ones from time to time. And when they come to hand, read them through and put away for future reference. One never knows just when he will want some information that he remembers having seen in a booklet of this kind some time before.

Mounting Stereograms

On page 388 of our September issue we gave, under the above heading, some suggestions that included the following: "As to trimming, the left hand picture should show a little more at the left end and the right hand one more at the right hand end". One of our correspondents, J. Homer Smith of Washington, D. C., points out that this is wrong, explaining that the right eye, when looking through a stereoscope, can see more of the view to the left than can the left eye, and the left eye can see more to the right. The paragraph quoted above should therefore read:

"As to trimming, the parts of the picture which are to be adjacent, i. e., the left hand end of the right hand picture and the right hand end of the left hand picture may be trimmed as little as possible, in fact, only enough to obtain the correct separation of the pictures, while the outside ends of the pictures may be trimmed quite severely as the eye cannot take in these parts. However, if the near or adjacent ends of the pictures have been trimmed by some necessity it is not necessary to trim the outside ends more, and if there is plenty of room on the card there is no necessity for trimming the outside ends at all."

We believe Mr. Smith is right in his contention. We were led into error by examination of a stereoscopic picture, the first to hand, one put out by a photographer who should know just how the trimming is done. Turning to other samples of the same man's work we find they do not follow any rule. Some are as Mr. Smith advises, others show no difference.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, 1369 South Washington St., Denver, Colo.

J. H. Winchell, Chief Album Director, R. F. D. No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Call Building, San Francisco.

Charles M. Smythe, Director Post Card Division, 1160 Detroit St., Denver, Colo.

NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

James B. Warner, Director, Stereoscopic Division, 413-415 Call Building, San Francisco.

NOTE.—All stereoscopic slides sent to Director for the circulating sets must be mounted, titled, and show the maker's name and I. P. A. number on the back of mount. Notify the Director how many mounts can be used, and a supply will be sent you by return mail.

George E. Moulthrop, Director Lantern Slide Division, Bristol, Conn.

Edward B. Cowles, Secretary Lantern Slide Division, 11 Oak St., Bristol, Conn.

STATE SECRETARIES.

California—A. E. Davies, 695 61st St., Oakland.

Idaho—Eugene Clifford, 902 9th Avenue, Lewiston.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—J. F. Peters, Room 210, Union Station, St. Louis.

New York—Louis R. Murray, 21 Clark St., Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, Roby.

Wisconsin—F. W. Freitag, 500 Monument Square, Racine.

NEW MEMBERS.

4245—Willia Nelson Maguire, Jetmore, Kansas.

3¼x5½, various papers, of landscapes, children and miscellaneous; for landscapes, clouds, and children. Class 1.

4246—E. A. Bell, Castella, Cal.

Class 2.

4247—Lee H. Darling, 1315 6th Avenue, Worthington, Minn.

3¼x5½ and under, developing papers, of landscapes and miscellaneous subjects, also California views including set of Busch Gardens at Pasadena; for birds, wild animals, insects, or any good pictures of interest. Class 1.

4248—Ira W. Guldner, P. O. Box 483, Hutchinson, Kans.

3¼x5½ and 5x7, developing papers, of general scenery; for work of same kind. First class work sent and same expected in return. Class 1.

4249—Roy A. Phillips, 1113 Turner Ave., Grand Rapids, Mich.

Any size up to 8x10, developing papers, of various, stereoscopic, etc.; for anything of interest. Class 1.

4250—Walter C. Staples, 259 Maplewood Ave., Portsmouth, N. H.

Class 2.

4251—J. H. Madison, Petaluma, Cal.

3¼x5½, developing paper, of views of California; for views of general interest. Class 1.

4252—C. J. Palms, Box 115, Greenville, Pa.

3¼x4¼ and 4x5, developing paper, of landscapes; for views of general interest.

Class 1.

4253—Juan L. Teanlai, Box 43, 8 General Luna,

P. O., Naga, Ambos Camarines, Phil. Is.

5x7 and 6¼x8½, various papers, of landscapes, buildings, and street scenes; for the same. Post cards only. Class 1.

4254—F. A. Radke, Coram, Cal.

3¼x5½ and 4x5, developing papers, of mountain scenes, snowscapes, mining and cabin scenes, also several log and shake cabin scenes; for landscapes in general. Class 1.

4255—J. Severt Anderson, Omamee, N. D.

Up to 8x10, developing paper, of Dakota farm scenes and general views; for local scenes of sender. Class 1.

4256—J. A. Currie, 949 34th St., Oakland, Cal.

2¼x3¼, 1½x2½ and 3¼x5½, various papers, of F. P. I. E. views, Canadian Parliament buildings, Ottawa; Canadian, Oakland and other views; for figure studies, P. P. I. E. views and any other subjects of general interest. Class 1.

RENEWALS.

1747—W. C. Cosby, Box 338, Abilene, Texas.

3¼x5½, developing papers, of landscapes, ranch scenes, prairie dogs and horned toads; for landscapes, historical scenes, bathing scenes, figure studies draped and undraped. Post cards and good work only. Class 1.

3295—Jas. B. Herrick, Jr., P. O. Box 1105, San Diego, Cal.

1½x2½ to 8x10, developing papers, of landscapes, marines and bathing girls; for nudes and bathing girls. Class 1.

3326—Corbin B. Stambaugh, Browning, Ill.

Class 2.

3996—Paul M. Elder, Box 362, Coeur d'Alene, Idaho.

Class 2.

4156—Thos. P. Mason, 2333 Lawn Ave., Kansas City, Mo.

Class 2.

4162—Samuel T. Dent, 2744 North Ringgold St.,

Philadelphia, Pa.

Class 2.

CHANGES OF ADDRESS.

3212—G. L. Massey, Box 346, Bisbee, Ariz.

(Was General Delivery.)

3281—B. W. Lemley, Thorp, Wis.

(Was Chicago, Ill.)

3738—Wm. F. Prevett, 1848 Ogden Ave., Chicago, Ill.

(Was 1133 W. Jackson Blvd.)

4152—Thomas J. Bones, 310a State St., Santa

Barbara, Cal.

(Was Los Angeles, Cal.)

4193—1st Lt. W. H. Smith, 33rd Mich. Infy.,

Elko Club, El Paso, Texas.

(Was Grayling, Mich.)

4242—Oliver Saylor, 1884 Pacific St., San Luis Obispo, Cal.

(Was Lompoc, Cal.)

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Photographic Art Exhibition

The American Institute of Graphic Arts has once more justified its existence by showing at the National Arts Club, 119 East Nineteenth Street, New York, a most interesting and instructive collection of pictures made through the aid of photography, the exhibition to remain open until November tenth.

Edward A. Kendrick presided at the opening of the exhibition and introduced Pirie MacDonald, "Photographer of Men," who compared the photography of today with that of the early days. Dr. Arnold Genthe told of the progress in color photography, and W. L. Palmer of the great industry the "movies" have become. Professor Charles F. Chandler briefly described the principal discoveries on the action of light on various substances, illustrating his talk with examples of the different processes.

From the Chandler Museum at Columbia University were brought precious treasures, from a complete apparatus for making daguerrotypes to some of the most beautiful prints made by photogravure in color. Among the curios are photographs of President Lincoln at various periods of his career and old silver prints and daguerrotypes of other prominent men and women of the past.

An educational exhibit by the Eastman Kodak Company, with portraits of the men

who pioneered photography, and beautiful examples of the very latest developments in the recording of color by photography is also well worth seeing.

Mr. McGinnis Lectures in Denver

Stanley McGinnis, the well known autochrome worker and lecturer, addressed the members of the Colorado Mountain Club on "Beauty and Grandeur Near Denver", Friday evening, October sixth. The attendance was surprisingly large and the Auditorium of the Denver Tramway Company proved none too capacious for the club members and their families who availed themselves of the opportunity of learning of the scenic beauty of the country surrounding their city. The lantern slides shown were the usual good style for which Mr. McGinnis is noted and the address itself showed no little improvement over the usual rather stilted style of the lantern slide lecturer. Mr. McGinnis took the opportunity to explain that the statement, made in the announcement sent out, that "Many of his slides were made while climbing peaks" was evidently intended as a bit of witticism, as lantern slides were generally made in the more peaceful confines of a photographic dark-room and he had no recollection of having himself indulged in the mode of locomotion suggested by the phrase that the Mountain Club seemed so fond of using.

OUR BOOK SHELVES

"Texas, The Marvelous"

Nevin O. Winter, the author of this, the latest of the "See America First Series", not only gives us the history of this State of the Six Flags in an interestingly and informative manner, but he describes the country and its people with all the intimate detail that bespeaks not only a full and complete knowl-

edge of, but a fondness for the State's broad domain. Texas, which has been under six different sovereignties, has a history of change and struggle that has seemingly resulted in a people somewhat different from those of other States, and the development now going on has the same quality of "bigness" that characterizes these people and

NOTES AND COMMENT

their State. Mr. Winter is a charming writer and in this book he has displayed an appreciation of a worthy subject that results in the reader's enjoyment as well as instruction. Six plates in colors, forty duogravure illustrations, with a map, add to the completeness of the work. The price is three dollars and fifty cents net; carriage paid, twenty-five cents extra. Published by The Page Company, 53 Beacon Street, Boston, Massachusetts.

"Towards An Enduring Peace"

This is the title of a symposium of peace proposals and programs put forth during the past few years, the compilations being by Randolph S. Bourne, with an introduction by Franklin H. Giddings. This book is not being published in an ordinary sense of the term, being intended primarily for libraries and for the shelves of men and women seriously interested in international affairs. As a book covering the various peace proposals and kindred matters it represents the fruit of much careful work on the part of the editors, and as a production calculated to have a most informative and instructive effect it is to be highly commended. Such distribution of the book as will be made will be without cost, and those of our readers who are interested there-

in can no doubt secure a copy by applying to the American Association for International Conciliation, 407 West 117th Street, New York.

"How To Take and Make Moving Pictures"

The above is the title of a handsome little booklet of about fifty pages filled with most informative matter in keeping with the title. This book is issued by the Ford Optical Company, 1029 Sixteenth Street, Denver, Colorado, and sells for the modest sum of thirty-five cents post paid. The book contains some twenty-five or thirty illustrations that adds much to the clearness of the instruction that is given. An idea of the field covered can be gathered from a few of the chapter titles which are as follows: What is a Motion Picture? The Camera and its Construction, Lenses and Formulas, Developing the Films, How Films are Printed, Toning, Dyeing and Coloring, Title Making, Misframing, Causes of Unsteady Pictures, Flickering and Electric Markings, Trick Pictures and How a Motion Picture Can be Made to Pay. The book is one that will be found interesting and instructive by all who are interested in motion picture work and we would advise such of our readers to secure a copy.

NOTES AND COMMENT

**A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest**

Reported by William Wolff

C. L. Hixon of Yuma took a vacation at the several beaches and W. Metcalf of Santa Paula spent his at Catalina Island.

Am myself on a vacation at Ocean Park and almost forgot to make a report this month.

Over Reno way I found all the photographers quite busy and happy.

W. Roberts has opened a studio at Nogales, Arizona. Mr. Roberts came from Mexico some months ago.

T. S. Hutchison of Ogden has sold his sporting goods and kodak business to C. Armstrong, formerly of Browning Brothers

Company of that city. Mr. Hutchison is now with Proudfit's Sporting Goods House of the same place.

The Salt Lake Photo Supply Company have moved into a new and better location, one that will do much to make the house a winner.

The Utah Photo Materials Company have also been on the move. Their new location is next to the Salt Lake City post office.

A. H. Brooks is now located at Orcutt, having sold his Porterville studio to the Crittenden sisters.

San Diego dealers report fair business, particularly for this season of the year.

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C. H. Weston of Tropico and A. Majonier of Los Angeles attended the National Convention at Cleveland.

H. S. Irby has sold his studio at Prescott, Arizona, and was visiting in Los Angeles recently.

A New Size of Camera

The 8x10 size of plate or picture has the same proportion as the 4x5, a proportion that is being supplanted in favor by the post card size in the latter case, and in the former will no doubt find a strong competitor in the new 7x11 size of the Eastman View No. 2. This is perhaps the most pleasing proportion that could be given the view photographer as it is a little shorter form of the parallelogram than the popular post card size and a little longer one than the favorite 5x7; being, in fact, practically midway between the two. For group work the new size is obviously just the thing, while for view and landscape work the unnecessary sky space that is nearly always in evidence in the 8x10 print is transferred to the ends where more room is generally wanted. Best of all, the new form is much better suited to upright subjects such as tall buildings and the like. In addition, the picture looks larger and the particular proportion will almost invariably show either much more of the subject matter or larger images of the objects photographed than will the 8x10 size. The new camera has an added amount of swing to the back and the desirable feature of an exceptionally wide front board with a shifting movement that permits the lens to be centered on either half of the 7x11 plate. View photographers and others should investigate this new camera at the earliest possible moment, either by looking it up at their dealers or writing the Eastman Kodak Company, Rochester, New York, for descriptive circulars.

An Appeal For Albania

William Willard Howard of New York, who has returned from his third trip to this hunger zone of Europe, predicts that the entire population of Albania will die of famine and pestilence unless helped. He says that in Albania corn is fifty dollars a bushel, flour eighty dollars a sack, and macaroni five dollars a pound. He says: "The Albanians are as much entitled to sympathy and help as others. They have not taken

part in the war. They fed and sheltered the refugees from Serbia, even with the last measure of corn that the famine-smitten villages possessed. They have not done any wrong; yet armies have swept over their country, taking what could be found to take, leaving to the starving women and children only the carcasses of dead horses in the streets. I want to go back to Albania with a shipload of food. I have arranged for a ship—a new American ship, just launched and fitted for sea. The ship is ready and waiting. The treasurer selected to receive contributions is the Rev. Frederick Lynch, D.D., editor of *The Christian Work* and secretary of the Carnegie Church Peace Union. Contributions in any amount, from the price of a loaf of bread upward, may be sent to the Balkan Relief Fund, 70 Fifth Avenue, New York City."

A Finger-Print Camera

The very latest in cameras is one designed to photograph finger prints in a thoroughly efficient manner, even though the prints be located in a position that makes it difficult, if not impossible, to secure an image with a camera of the usual form. Four electric lights, situated within the camera, removes the handicap imposed by darkness, and as the front of the camera is placed against the surface on which the prints are located, no focussing trouble is involved. Pressing down the exposure lever automatically turns on the lights and opens the shutter, the lens being of such a focal length that a full size image is in sharp focus on the plate. A most interesting descriptive circular can be obtained from your dealer or direct from the makers, Folmer & Schwing Division, Eastman Kodak Company, Rochester, New York.

Opening New Branches

R. Lewis Morris, vice-president of Herman & Herman, Incorporated, the great New York chemical house, will sail on Saturday, October fourteenth, from New York on the steamer St. Louis to open English offices for the corporation. Messrs. Herman & Herman are also opening offices in Petrograd, Moscow, Genoa and Barcelona, and still others will shortly be opened in the Far East. In November an officer of the company will sail from New York for Brazil and Argentina, to establish headquarters in those countries.

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Prizes For Photographs

Photographers, both professional and amateur, can find a good market for a certain class of pictures by addressing the Portland Cement Association and requesting details of a photographic competition which it is now conducting. A number of cash prizes for best pictures received will be offered, in addition to which all prints received that are suitable for advertising or booklet illustrating will be purchased at a fair price. Write the Portland Cement Association, 111 West Washington Street, Chicago, Illinois, for particulars.

Money For Good Photographs

The Portland Cement Association is conducting a photographic competition for the purpose of securing pictures showing the many ways in which concrete has been used. Cash prizes will be offered for some of the best pictures received and all others which may be entered in this contest and which

prove suitable for use for advertising and booklet illustrating, will be purchased at a fair price. Any good picture of concrete work is therefore likely to be worth money to you. Please pass this information along. If you or your friends are interested, write for full particulars to the Portland Cement Association, 111 West Washington Street, Chicago, Illinois.

Mr. Riley Enters New Field

Phil M. Riley, for many years Associate Editor of *Photo-Era*, and well known to the reading public for his informative articles on photography, architecture, mechanics and the motor car in many leading periodicals, has joined the editorial staff of *The India Rubber World* as a special writer. Mr. Riley has been studying the rubber industry for sometime past, has appreciated its great opportunities and hopes to make it his life work. He has our best wishes for a signal success in his new field.

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24th, 1912, for October 1st, 1916, of *CAMERA CRAFT*, published monthly at San Francisco, State of California, County of San Francisco.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fayette J. Clute, who, having been duly sworn according to law, deposes and says that he is the editor of the *CAMERA CRAFT* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

Publisher, Camera Craft Publishing Company, San Francisco, California; Editor, Fayette J. Clute, San Francisco, California; Managing Editor, Fayette J. Clute, San Francisco, California; Business Manager, Fayette J. Clute, San Francisco, California. That the owners are Camera Craft Publishing Company, San Francisco, California; Harriette E. Clute, Trustee, Hanford, California; Romaine F. Clute and Clifford H. Clute, Beneficiaries, Mountain View, California.

That the known bondholders, mortgagees, and other security holders owning or holding

1 per cent or more of total amount of bonds, mortgages, or other securities are none.

That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

(Signed) FAYETTE J. CLUTE, Editor.

Sworn to and subscribed before me this twentieth day of September, 1916.

SID J. PALMER, Notary Public, in and for the City and County of San Francisco, State of California. My commission expires December thirty-first, 1916.

CAMERA WANTS

Advertisements of the above nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted free. No business advertisements accepted.

10x12 GUNDLACH Rectigraph lens, newly fitted with Iris diaphragm; 11st, \$60.00; will sell for \$25.00. N. C. H., care "Camera Craft," San Francisco, Cal.

FOR SALE Zeiss Protar VIIA No. 13, f:6.3 in Volute shutter, including barrel mount with iris diaphragm. All in first class condition. Price \$65.00, cost \$129.50. A. L. Sears, Mount Vernon, Wash.

MOTION PICTURE Camera, Prestwich No. 5 motion picture camera, with Zeiss Tessar f:3.5 lens, professional tripod with tilting and panoramic top, extra fade out and iris attachments, carrying cases for camera and magazines. Complete outfit in fine condition and suitable for most exacting professional work. Outfit cost new \$360.00, sell for \$170.00 cash. Write or wire to Camera-man, Room 316, 1900 Euclid Ave., Cleveland, Ohio.

FOR SALE Studio in mining town 8000 population, monthly payroll \$150,000.00; nearest town 7 miles, population 12,000, good payroll; 8x10 Century camera, Voigtlander lens. Three years' lease, third door from post office, one competitor. Splendid opportunity for right party. Good reason for selling. Fisher Studio, Miami, Ariz.

FOR SALE Photo studio in town of 30,000 population; also enlarging and amateur work amounting to \$100.00 per month. Viewing 8x10 with Goerz Dagor 6 1/2 x 8 1/4. Rent only \$10.00 per month; electric light, heat and running water, also living room. Good reason for selling. \$100.00 cash. Majestic Studio, Majestic Bldg., La Crosse, Wis.

POSITION WANTED Photographic supply buyer for large department store wishes similar position in West or Southwest, Mexican border state preferred. Will consider small proposition. Address Buyer, 418 East 40th St., Chicago, Ill.

POSITION WANTED In studio by an all-round photographer of several years' experience. Can furnish references to satisfy the most exacting. Address C. L. Dunlop, 1001 S. 1st St., Louisville, Ky.

FOR SALE Ernemann Folding Pocket Camera, 3 1/4 x 4 1/4 Carl Zeiss Tessar f:6.3 lens, focal plane and front shutters, 6 plate holders and film pack adapter. Cost \$100.00, will sell cheap. J. Herlihy, 451 4th Ave., Phone Pacific 5548, San Francisco, Cal.

POSITION WANTED By Japanese retoucher, will work by piece. N. F., 1422 Geary St., San Francisco, Cal.

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WANTED Experienced first class salesman for amateur retail department, permanent. Give experience, references, salary expected and send photograph with first letter. W. L. G., 22 Central Ave., Atlanta, Ga.

QUICK SALE 8x10 view camera fitted with new f:6.3 Velostigmat, with finishing outfit complete. Dandy outfit. Bargain for cash. Need money. W. H. Partin, Sapulpa, Okla.

\$450.00 Will buy fully equipped leading studio, Central California; territory 5000, rent \$12.00; good opportunity. Holiday trade should clear investment. Easy terms, less for cash. Address A, care "Camera Craft", San Francisco, Cal.

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POSITION WANTED By cultivated artist, student of the Munich High School of Fine Arts, Germany. 25 years' practice in professional photography and all its different branches, expert in home portraits and studies of children; would like to make contract as operator with first class studio only. No "cut and dried" work done. Also fine landscape artist. Can give best of references, also samples and self portrait. Send your offer to F. H., 311 F St., Eureka, Cal.

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CAMERA CRAFT

A Photographic Monthly

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A PORTRAIT STUDY
By R. C. WARD



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXIII

DECEMBER, 1916

No. 12

The Small Town Photographer

By R. C. Ward



With an Illustration by the Author

HELP WANTED: Man who is a good merchant, a live salesman, an artist in both portraiture and landscape, a manufacturer, a fair mechanic, and with some knowledge of chemistry, advertising, bookkeeping, photographic optics and window dressing. Must be neat in appearance, cheerful, able to handle children and make friends generally. A good comfortable living and pleasant work for the right man. Apply: Any Studio, Any Small Town.

With such a staggering list of requirements of so varied and opposite a character it is really surprising to find so large a number of photographers making good. Bearing the demands of the above advertisement in mind, we can be more charitable in our criticism of the many who are not developing or making use of the opportunities that we feel are offered in their individual fields. More, we can feel no little pride in the large number who are earnestly working to place their profession on a plane that commands respect.

It is safe to say that almost every town of fifteen hundred or more population will support a well trained, live, hustling photographer, and do it well; while there is usually room in the same town for one or two weak members of the profession to slowly starve. The public is prone to relegate the professional photographer to the same plane in their minds as that occupied by the dollar camera, and the push-the-button amateur, regarding lightly his many hard earned accomplishments. All professionals are compelled at times to realize this tendency and it is dependent upon them, and them only, to force a proper recognition of themselves and the value of their work from a somewhat reluctant public. This educational work must be maintained unabated every minute of

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the time, and a good starting point is with the amateurs themselves. Hunt them out, every one, man, woman and child, for miles around. Take an honest interest in their work and in helping them to improve. Teach them cheerfully, and freely, carry supplies for their cameras, do their work carefully and well, make them understand what is being done for them, encourage new ones to start, sell them cameras, and above all, make a loyal friend and booster out of every single one. Their opinion of you and your work carries great weight among those making up their circle of friends; therefore, as a matter of good advertising policy, see that the weight is on your side of the balance. Both their trade and their finishing work are profitable, and the small town photographer of today, who, on account of antiquated ideas, throws away the direct and indirect profits from this side issue is lacking in at least two of the requirements of our advertisement, with probably a liberal amount of shortsighted and bull-headedness taking their place.

Do not stick around indoors all the time; get outside and freshen up. That view camera was bought for use. Make it work, and do not be afraid to speculate with it. Get a good collection of local views, and then keep trying to make it better. Print the best ones on post cards and control the post card trade of your county as far as you can reach. Have your name on every one; it is good advertising. Get in touch with the real estate dealers and any others who might use photographs in advertising. Send good prints to the passenger department of your railroads, asking for transportation in return. Let them know that you do such work, do it well and that you are on the spot when they want views in your locality.

Get some of your work into the local papers and magazines and then keep copies of the publications in your reception room. Published photographs impress your patrons with your importance. Go after every bit of view work in sight, as it keeps you before the public. Teach them to expect you, with your camera, at every wedding, family reunion and public functions in your town. Get up a good set of lantern slides to show at entertainments, church affairs, and the like, and show them, along with some slides of well known people in your own town and those close by; and, do not forget to have your name on everything. Advertise moderately but continuously in the local paper. Never allow your neighbors to forget you; mix with them, keep track of them, and do it all the time.

Keep watching for the birth announcements and drop the mother a couple of attractive post cards showing grouped baby pictures a short time after that new baby arrives. The first time you meet the fond mother, suggest a sitting for the baby. Do not forget this and do not let her forget that a picture should be secured. She will appreciate your attention. Get up a card index showing the birthday of every child. Send a post card to the child as each birthday comes around, suggesting a sitting. Look out for family reunions and get the groups, even if you have to go some distance to the house with the view camera. Watch for new buildings and any other new development that you can photograph. They are all good prospects, and speculation work in small town is looked upon much as a kindness. Even in a small territory there are so many such opportunities that it will be found hard to keep track of them all; but

THE SMALL TOWN PHOTOGRAPHER

do it, no matter how hard, and get there a little ahead of the other fellow. Do not stay at home because there may perhaps be nothing in the job, but risk a plate, as so doing will usually lead to something else. Get the fresh air, brighten up both mind and body, and put this freshness into your business. Keep yourself youthful and lively; it pays in so many ways. With a little care and effort one can be young at seventy.

Do not overdo it in the matter of telling your patrons what they should have. Give them a chance to show their own preference and sell them what they really want. If there are many foreigners in your district they will probably prefer bust pictures, large heads, hot burnished solio prints, on narrow margin cabinet mounts, with white, over-retouched faces. Make what they want and make them at a fair price. They want pictures to be sent in return like the ones that the folks at home are sending to them.

Be nice about it, and be sure of the white faces, particularly for dark complexioned races. They are sensitive about this and that sensitiveness prevents their asking for the light faces. A few experiments will quickly show which side of your bread is buttered. I know of a wealthy Italian banker who visited six different city studios in search of this style of work. Did he get it? He did not. Instead, six shining lights in the "receptionist" class all but insulted him for his old fashioned tastes. The work finally went to an ordinary view man at a good price, and that view man made an influential friend. When you make pictures of their houses, forget all about depth, atmosphere, tone, etc. Stop down and get microscopic sharpness, and make brilliant, snappy prints. This is a perfectly safe rule to follow in all view work; at least until you know positively that the customer really wants and will appreciate something better.

Subscribe, by the year, for two or three good photographic journals, and study them. When you order stock, get occasionally, some of the many good photographic books that are published to help you, and then study them. Study the examples of work in the current magazines. If you can get no benefit from so doing you are a candidate for dry rot and the starvation class. I once found, in the darkroom of a really successful man, a pulpit-like arrangement supporting an enormous scrap book with a reading light conveniently arranged above. He called it his "Art Bible". Examination disclosed pages of carefully arranged and indexed prints cut from magazines; profiles, full faces, busts, half lengths, etc., all arranged and grouped according to the lightings so as to be instantly available. As each one was inserted it was carefully studied and a few concise lines added beneath giving camera height, lighting, accessories, etc., as a quick aid in duplicating the pose. Many of his own successful prints were included. In practice, he first found out in the reception room about what the customer wanted; then, leaving the sitter in the dressing room he would consult his "bible" and decide on the pose to be first attempted. Reloading the plate holder gave him an excuse for finding as many successive poses as he desired, poses best suited to the subject, and the slight delay also gave the sitter restful breathing spells. This man's weak point was originality; and, realizing it fully, he made methodical use of the ideas of others, just as we all do, though perhaps unconsciously.

CAMERA CRAFT

Spend a few dollars and install a flashlight cabinet. Then all fear of squirming babies, nervous sitters, and the inevitable one who wants that—dear poodle included, vanish like an early morning mist. And when mother asks for the baby's smile or pout, how absurdly easy it becomes with a flash available. It is a great advantage to be independent of daylight conditions; to be able to catch those brilliant flashes of expression and make them a permanent fixture in your prints.

Invest a few dollars and a lot of thought in your work-rooms. Wood and good photo varnish are so cheap that there is no excuse for lack of sink room, trays or washing boxes. Remember you are a manufacturer and that the success of a factory depends largely upon proper equipment. A closet is no fit place for a white man to work in. Have plenty of room and good ventilation, even if it takes half your reception room to get it. Install a printing machine; the Century is a good one, and will insure prompt deliveries, uniform work and a great saving of time. Do not sacrifice half your profit through waste of time and material due to working in a cramped and poorly equipped manufacturing plant. Some day we will have efficiency experts who will come around and arrange these things for us, just as they do for other manufacturers. Until then, put a lot of thought into your workrooms. Study each movement, each operation, and eliminate every useless step. Energy and time can be as easily wasted as material, and their waste should be earnestly avoided. For example, keeping the shelves and room well dusted with a damp cloth, will be found an economy. Oil the floors, put cheesecloth screens on the doors, windows and ventilators, keep your negatives dusted while printing; and, doing this, nearly all your spotting is made unnecessary.

You must be an artist, an advertiser, a merchant, a salesman, a mechanic, a manufacturer. You cannot excel in all these lines but study your weak points and use the experience of others to strengthen them. Where you cannot originate, copy. All successful business men take advantage of improvements devised by others, and you should profit by their example.



Some Portland Salon Pictures

By Edgar Felloes



On a recent visit to Portland after an absence of years, I drifted into the Camera Club to satisfy a curiosity natural to a former member. The desire to know who were "on deck" and how things fared photographically was strong and the meeting with a few of the old-timers was delightful. To be greeted with "You're just the man we want," had a heartiness that almost disarmed suspicion, and later, to find myself a member of a hanging committee expected to work, dispelled all doubt as to that whole-souled heartiness.

The joys and picnics of a "hangman" had been experienced before; one learns in an incredibly short space of time that a photograph, no matter what its merits, may loom as large, to its producer, as does an only child; in fact, a photograph sometimes is a one-hundred point baby in another form. The desire to please everybody was an ambitious undertaking; but the hearty co-op-

eration of such members as W. B. Struble, Henry C. Morse and the indefatigable Will H. Walker, the hanging committee, backed with a determination to do their best and be done on time, assured a creditable success.

On October fourth, with everything placed and ready, The Photographic Salon, under the auspices of the Oregon Camera Club, was opened to the public in the Central Library Building of this city. It can be truthfully said that never before had there been offered to Portlanders such a Photographic display. The number of pictures was a large one,



WINTER REFLECTIONS

By GEORGE F. HOLMAN

CAMERA CRAFT

four hundred and forty-eight, making up an unusually attractive exhibit of high class pictures, some of which had graced the walls of international exhibitions and been awarded recognition in this and foreign countries. Many former members of the club had contributed their best efforts; and their offerings, together with the work of the members, covered such a wide range of subjects that visitors of all tastes found something to interest them.

I have been requested to write of this show for CAMERA CRAFT; and, thinking a little well meant criticism might make this more interesting to the average reader, I did not strive to secure examples of only the best work, but instead requested certain pictures from some of the most skilled contributors, for criticism. The reader will please understand that the pictures reproduced herewith, though good, are not necessarily the best efforts of the producers, but were selected by me as offering opportunities to point out certain defects frequently found in photographic work. It is very easy to say "You are all very clever, bless you, my children," but there is no doubt a large number of readers who would like to know more about the pictures reproduced.

The first I called upon was C. F. Richardson, the president of the club, who was asked for a print entitled "Grandeur and Ruin". When he learned my object he hesitated momentarily, then good naturedly said "You shall have it!" "You are a sport," I replied, "You have been told that was a wonderful picture; come and take your medicine!" And here let me extend my thanks to the president of the club and those other gentlemen who so good naturedly provided me with their prints for criticism.

One of the pictures that attracted much attention was this "Grandeur and Ruin," by Mr. Richardson, a beautiful print in green carbon. In it the artist has given us a striking, a very unusual, marine study, one showing much painstaking and conscientious work. Could it be improved? In my opinion it could be made even more striking with a very little effort. In the first place, the attention of the spectator is divided between the distressed ship and the rocky cliff, as they are equally forceful and on that account produce a distracting effect. The reader will notice the area of dark of the cliff and of the ship are about the same. As the point of interest is the ship, all else should be made subordinate. As the distressed ship is the soul of the picture, that alone should focus the attention. The simplest way to achieve this would be to gray the cliff by holding it back in printing and thus avoiding repeating the strong darks shown in the ship. By decreasing the pronounced color in the rocks the ship would command more attention and the spectator's mind and eye would not so readily wander. The cliff might likewise be trimmed down a little, if necessary, to further heighten this effect, and so doing would also reduce the area; which, as I remarked above is too near a repetition of the wreck. The point I wish to make clear is, the cliff might be larger or smaller, but not as it is shown, of a similar size; and in any event it should not show an equal amount of "pluck". Mr. Richardson contributed several examples of his photographic skill, but to speak of pictures without illustrative examples has always struck me as of little profit and somewhat tiresome to the reader.

There were several snow scenes in the exhibition, but I believe "Sunlight and Shadow", by G. M. Allen, attracted the most attention. This is certainly



GRANDEUR AND RUIN
By C. F. RICHARDSON

a very beautiful composition and the large splash of gray shadow in the foreground is very satisfying. It would be a very simple matter to enhance the artistic effect of this composition. The trees forming the clump on the right are beautiful in themselves both in their velvety color and in their grouping. It stands to reason that the photographer should make the most he can of them. Instead of being content to make a bromide enlargement, with its difficult control, he should make an enlarged negative. If cost be a consideration, let him make it on paper instead of on the usual glass plate. There is no need to wax or oil a paper negative except to get speed



SUNLIGHT AND SHADOW
Copyrighted 1916.

By G. M. ALLEN



"THE BLIND ALSO DO THEIR PART" By H. C. MORSE

in printing, as I have seen contact prints from large, unwaxed paper negatives that were satisfactory in every way. Having the paper negative, let him proceed to hold back the fir trees at the left in the background by applying a uniform tint of crayon or other suitable medium. For the benefit of the beginner it might be explained that this is done on the back or paper side of the negative, the idea being to keep these distant or background trees somewhat lower in tone so that they appear more distant. The fence should be helped in the same way but to a lesser degree. The result in the final print



EMBRYO MERCHANTS
By SUISAI ITOW



THE CHIEF MOURNER

By D. W. ROSS

will then be, if these suggestions are properly carried out, a picture having three distinct planes instead of as at present; it now having, at least in an aerial sense, only one. By doing this, by increasing the depth from the near to the far, we would greatly enhance the beauty of the composition. The eye could then wander in among the trunks of the nearer trees and experience a pleasure at the sense of space.

Several dog pictures graced the walls, and of these I was particularly attracted by "The Chief Mourner", contributed by D. W. Ross. Here we have a story telling picture of strong appeal. The focus of interest is undoubtedly the dog, but alas, we are so bothered with a multitude of irritating detail in the background that we almost have to go in quest of the dog. This subject has great possibilities; and, properly handled, would have dollars sticking all over it. From what I have written the reader will probably realize that, by reducing the intensity of the blacks in the background and thereby flattening it, the dog would be made more prominent and appear more as he should. Let me describe, for the benefit of the beginner, a method of doing this. As there are such a multitude of dark patches to be subdued, I would recommend employing a pale positive plate instead of, let us say, black chalk on the back of the negative as suggested for Mr. Richardson's picture. This plan is less laborious and more to be recommended where foliage or fussy detail is to be suppressed.

The procedure is as follows: Assuming that the negative is on glass, apply opaque to the glass side in such a way as to protect the clear parts in the image of the dog. The whites in the dog are strong enough to take care of themselves

SOME PORTLAND SALON PICTURES

by forming their own mask, but the black portions and the cast shadow of the animal should be protected. Put the negative face up in a printing frame, superimpose thereon a slow plate, face down, close the back and give a short exposure with the object of securing an undertimed positive. See to it that the two plates are shaken down into one corner of the printing frame as this will make perfect register quite easy when the two are used together later. The plate exposed, develop harshly but thinly as only the shadows or darks are wanted. When finished and dried, try its effect on the original negative. The probability is it will need reducing, particularly if one's first attempt, and



SUNDAY MORNING ON THE STRAND
By E. D. JORGENSEN

for this purpose Farmer's reducer is quite satisfactory. This positive of the right density, all that remains to be done is to bind it up, in perfect register, face to face with the negative, using lantern-slide binding for the purpose. Remove the opaque paint from the glass side of the negative and then place before the light and copy in the camera. The result is a stock positive from which working negatives of almost any desired quality may easily be made. In this particular instance the sky should be made to print gray, thereby flat, securing a sad effect, one more thoroughly in keeping with the subject.

Many will think this a whole lot of trouble, and so it is; but there are some subjects worth while, and this



LANDSCAPE

By A. G. MEYERS

one gives me the pleasure of showing the reader something decidedly worth while; but the picture must be simple and the story must be driven home.

I asked Mr. Walker to make me a print of his "Spring", that I might be able to point out its faults. The beauty of the work I will leave the reader to enjoy; but, like the villain in the play, I have my part to perform. This picture shows a dereliction exceedingly common among photographers,—inappropriate focussing. Note the background, how insistent and sharp it is. The photographer is quite inclined to overlook this point in his figure compositions, his attention being concentrated on the pose and lighting of his model; which, I presume, was the case in this instance. The shortcoming I have pointed out could have been prevented by posing the model at a greater distance from the background and so arranging the focus that the plane of sharp definition did not extend beyond the boy's far shoulder. This done, the background would have been softer and a greater relief or better perspective would have resulted. The mass of daisies on the right might also be toned down so as to somewhat minimize the spotty effect. The picture here reproduced is a contact print from a paper negative about six times larger than the original glass one.

"Winter Reflections", by George F. Holman, was exhibited as a beautiful sepia platinum. It struck me that his title was not a happy one; the word Autumn, to my mind, would have been a better choice. True, this is a small matter, but of sufficient moment to merit consideration, nevertheless. The distant bank on the left, including the trees thereon and their reflections, could have been advantageously held back in the printing, thus adding another tone and increasing atmosphere. The reader will notice that the larger tree on this side is shown fully as brilliant and plucky as the much nearer clump in the foreground opposite. In taking this picture the artist should have availed himself of the side swing to his camera and thrown the left bank a little out of focus. I have purposely selected this photograph for reproduction, as it enables me to show when the side swing may be used to advantage, many photographers seeming not to appreciate this useful attachment to their view cameras. In spite of my well meant fault-finding I feel sure the reader will derive pleasure from this example of Mr. Holman's work. It shows that fuzziness is not essential to artistic rendition; and, although I like the soft-focus picture, I do not agree with those who accept such treatment as a proof of artistic merit. Fuzziness alone will not make a picture artistic, and when carried to extremes it is ridiculous; for, we should remember, art is much older than photography.

A. G. Meyers, one of the newer members of the club, exhibited several landscapes, his selections being all quite pleasing. The one here reproduced is effective but the clump of young fir trees on the left is uninteresting. As one cannot well overcome the difficulty by trimming, he might hold back the two near bushes in the printing and thereby add interest by breaking the tone monotony. The path should be shaded down in the foreground and the light confined to the middle distance. This would improve the effect.

"The Blind Also Do Their Part", by Henry C. Morse, shows that this artist certainly cannot be accused of confining himself to any particular class of subject. As a confirmed globe trotter, he seems to have negatives made in every clime, and this one of the blind woman at the fountain is an admirable

SOME PORTLAND SALON PICTURES

bit of composition. The one suggestion I would make is that he should either print the figure a little stronger or hold back the other darks in the picture, as doing either would add to the relief by isolating or bringing forward the figure which is really a beautiful one.

"Embryo Merchants," by Suisai Itow, is a charming genre picture that



SPRING

By WILL H. WALKER

will appeal to everyone; it is a bit snatched out of life. The leaning figure at the tree is capital and there is a movement in the other little chap that is quite spontaneous. The background is very satisfactory; one can easily feel how the composition would have suffered had the distant tree and buildings been sharp.

I felt it hardly fair to ask Mr. Jorgensen to make me a print of "Sunday Morning on the Strand" in place of his great success "Tourists—Austria", but there is a point in the Strand picture which I would like to call to the reader's attention. In the exhibition picture, an enlargement, the cab at the right stood out very prominently. It was the first object that caught the eye and, as is invariable the case, it is likely to be the last thing on which the eye rests. The mental impression is a picture of a cab with buildings in the background. As one of the buildings is a church of great historical moment, one feels that the focus of interest should be there and not on the cab, hence the picture suffers. This will also explain one of the reasons why figures in a landscape have to be so carefully handled, for unless the artist exercises restraint his work will be accepted for what it was not intended.

In conclusion I wish to say I do not offer this as a report of the Portland Salon; but rather, as a criticism of a few of the pictures therein, offered in the hope that what I have written may be helpful to those of my readers who are beginners in photography.



Trial By Jury

By the Secretary of the Great Critic



Time, evening. Room dimly lighted so that pictures are hardly visible, suitable to the vagaries of the tonal and diffused school. Ten minutes past eight, two hundred of the thousand pictures already judged. The Great Critic with his secretary-escort arrives. He glances about and frowns. Twenty or thirty male and female pictorialists loom in the atmosphere. "All judges?" the Great Critic asks. There is a shuffling of feet, but nobody leaves. The three associate judges are pointed out to him. A stout Teuton who has built an art palace, a gallery owner with a euphonic name and a red-tie Bohemian, who is an expert shot and much feared by automobilists. The Great Critic grins, sits down and the performance proceeds. Not a word is spoken. All the judges are expert linguists and they give their verdict mysteriously by uttering the words: One—two—three.

Two—two—three—three—three—one—two—three. The pictures are put on the easel with amazing rapidity, half a dozen, yea even a dozen a minute. The Great Critic rises and argues in favor of a shadow effect. The others ejaculate: two—three—three. The picture is thrown in the heap of the rejected.

An hour passes. The light grows dimmer,—the vision of the judges more weary. Three—three—one—two—three—three. The picture of a lady ambling on the hills decollete as if all by herself, is put on the easel. The stout Teuton mutters "Fine. One." The Great Critic asks "Do you know the lady? Three." Three—two—one—one—two—three. The lady disappears and nobody knows her fate.

At ten minutes past ten the pictures are all two'd and three'd. The Great Critic makes a movement of disgust with his right hand. The German architect retires to the Hof Brau, the red-tie Bohemian follows his pursuits of nocturnal pistol practices. Only the gallery owner stays, and indulges in some specialized and individual arithmetic: $1 = 3$, $3 = 3$, $= 3 - 1$.

Judge each man by his own methods, and, again let me say, look for the artist's meaning. You know in the novel we take up Dumas and Sue for plot, Georges Sand and Hugo for narrative and description, Howells and James for character analysis, Poe and Stevenson for the weird and uncanny; and why should we not do the same thing in painting?—JOHN C. VAN DYKE.

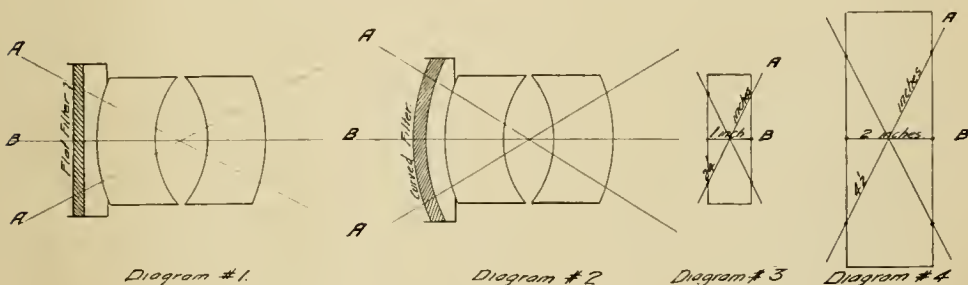
The Right Form of Color Filter

By J. E. Broaddus



With Illustrations by the Author

Having experienced the usual difficulty of uneven illumination of the plate caused by the use of the ordinary flat color screens, especially the ten and fifteen times ones, the question naturally presented itself as to the reason thereof. As the result of some thinking I arrived at the following conclusion: Consulting diagram No. 1 it will be seen that the rays A, A must necessarily pass through a greater density than the ray B. A test on a white screen, using a ten times flat color screen, as shown in the diagram, proved positively that this not only was the case but that it influenced the illumination, making it of varying degrees from the center of the plate outward.



To overcome this, I made a converging meniscus filter to follow as nearly as possible the outer curvature of my lens. While the glass was of a very high index and the curvature being $+ \text{Sph.}$ which shortened the focal length of my lens over half an inch, and I was compelled to make the color filter quite thick in order to obtain sufficient density, it gave results far superior to those secured with the flat screen. Believing that this meniscus filter, being in reality a converging concavo-convex lens, must have a varying absorption, I decided to make another curved filter, its services being concentric spherical curves as shown in diagram No. 2.

Using this, the results were all that could be wished, and an examination of the various results secured on the Paget and other color plates convinced me that the theory on which I was working must be the correct one and that it was no difficult matter to construct a color screen on the right lens, one that would admit of any desired density while yet giving even illumination over the entire plate.

As to why the ten or fifteen times color screen gives uneven illumination I would submit the following diagrams, Nos. 3 and 4. Assuming diagram No. 3 to show a medium one inch thick it follows that the line A has to travel two and one-quarter inches while line B travels only one inch. In diagram No. 4,

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No. 1: Taken with a ten times flat color screen of standard make. The illumination was not absolutely uniform, which accounts for the local irregularity in density at the right-hand side.



No. 2: An outdoor subject taken with the same screen and lens, showing the same falling off in the illumination as the edges of the plate are reached, particularly at top and bottom.



No. 3: Taken with the meniscus or curved color screen, showing practically even illumination. All plates tank developed and all straight prints using the same light at a fixed distance.

in which the medium is shown as being two inches thick, the line A, having the same angle, travels four and one-half inches while the line B travels but two. Considering the medium in diagram No. 3 as a one time filter and diagram No. 4 as a two times filter the difference is very great; and, when this is multiplied by ten or fifteen, it certainly is great enough to destroy all hope of anything like even illumination of the plate being used. There is no accuracy claimed for these diagrams and I am only presenting the idea, as I believe it has merit enough to justify its consideration by careful workers, if not by the opticians and others who supply us with our color screens and filters. Since working out the experiments I have learned that the manufacturers of the Paget plate in England supply the meniscus form of filter and I can therefore not claim this idea as original, although I give myself credit for working it out to my own satisfaction without any knowledge of this previous use of the idea.

Besides, I myself have now for a long time ceased to look for anything more beautiful in this world, or more interesting, than the truth, or at least than an effort one is able to make towards the truth.—MAETERLINCK.





Enlarging with Cooper Hewitt Lamps

By M. B. Buckmann, Jr.



For the benefit of those who may contemplate the adoption of a light having the particularly effective actinic quality, combined with freedom from heat rays, that characterize the Cooper Hewitt Mercury lamps, the following detailed results of some carefully made experiments are offered. The reader must bear in mind, however, that these experiments were made with the wants of the professional portrait photographer in mind, particularly the wants of those workers who desire to make, from portrait negatives, enlargements within the size that is permissible by reason of the retouching and the demand of the patron for sharp, smooth results.

Where greater enlargement is allowable, as in landscape and pictorial work, the exposure is of course somewhat longer, the exact amount of increase for the greater enlargement being easily estimated. Then, an enlargement of one and one-half times requires one and one-half times the standard exposure, enlarging two times requires two and one-fourth times the standard, enlarging two and one-half times requires three times the standard, enlarging three times requires four times the standard, enlarging four times requires six and one-fourth times the standard, and enlarging five times requires nine times standard exposure. One need only ascertain the exposure time required in making a point the same size as the negative, making it through the equipment employed, and then consider such time the standard. As there was about one-third of an inch unused margin around the edge of the 8x10 negative used in these experiments, the enlargement to 11x14 was one and one-half times standard. An enlargement to 22x27 would have been a three-times enlargement requiring four times the standard or as four is to the one and one-half times given for the 11x14 enlargement. The proportional exposure for intermediate degrees of enlargement can be approximated from these figures closely enough for all practical purposes.

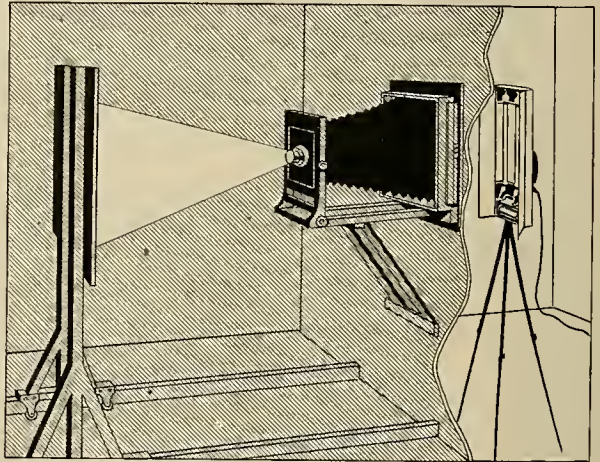
The experiments undertaken were also calculated to determine as accurately as possible the relative time of exposure for at least a sufficient number of the typical papers to permit the user of any particular kind to estimate quite closely just the length of exposure required in his case, even were the paper to be used not one of those employed in making these experiments. Three of the papers tested were regular bromide or enlarging ones, while two of them were emulsions or papers used mainly for contact printing, yet occasionally employed for enlarging by reason of their individual characteristics being, in some cases, more suitable. All five are the product of leading manufacturers and all are in regular use by portrait photographers for the making of enlargements.

For these experiments there was secured, through the courtesy of Ryland Phillips, the well known Philadelphia portrait photographer, a normal, fine quality, 8x10 negative, one that had been given correct exposure and develop-

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ment, one that required a normal exposure for a contact print made in an ordinary printing cabinet equipped with a battery of incandescent lamps. This negative required an exposure of one second under a single tube Cooper Hewitt printing lamp for a contact print on Azo G Matte paper, the distance being two feet with a single sheet of tissue paper interposed about midway between for proper light distribution. After exposing the print was developed for the full time recommended by the Eastman Kodak Company for their standard formula for the development of Azo paper, as follows: Metol, one ounce; hydroquinone, one-fourth ounce; sulphite of soda, fifteen ounces; carbonate of soda, twenty ounces; bromide of potassium, two drams, and water, six quarts. The reader can see from this that the density of the negative was such as to characterize it as a good, clear, normal one.

Two different types of the Cooper Hewitt outfits were used; one being the No. 20, consisting of two type H tubes giving two columns of light, twenty inches long and one inch in diameter, placed five inches apart and equipped with white enameled parabolic reflectors twelve inches in width. I understand that the manufacture of this particular outfit has been discontinued in favor of a similar one using the new U-shaped tube, which last has been found better suited to home portrait work and to the other purpose for which used, that of printing and for illuminating the copy in making line



ENLARGING WITH THE NO. 20 OUTFIT and half-tone engraving plates. The lamp shown in the first illustration, the one employed, had a current consumption of three hundred and eighty-five watts per hour, costing from two to four cents per hour, according to the price of electricity. This lamp was found to cover the negative to the best advantage when a single sheet of ordinary ground glass was placed three inches back of this diffusing medium. The camera was an 8x10 Folmer & Schwing revolving back enlarging camera, the negative carrier being equipped with a revolving attachment, which, with the sliding movement and rising and falling front, makes accurate centering of the image upon the easel an easy matter. This camera was arranged as shown in the illustration, with its back against an opening ten and one-half inches square, cut in the partition separating the dark-room from the room in which the lamp was located. The lens used was a Cooke Series V, thirteen inches focus, stopped down to f-11, and every care was taken to maintain the same conditions throughout the making of the several exposures.

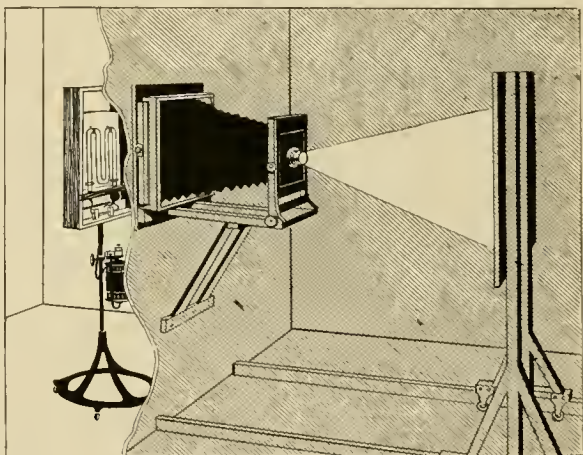
As explained, an enlargement of 11x14 was decided upon as the one best suited for the purpose in view. Using Eastman's Royal Bromide paper, ten seconds

ENLARGING WITH COOPER HEWITT LAMPS

was found to be the correct exposure. Eastman's P. M. C. No. 2 and Velour Black made by the Rochester Photo Works were found to require four seconds, while Ansco's Enlarging Cyko demanded ten seconds. Turning to two of the typical chloride papers that are intended for contact printing but sometimes used for enlarging on account of the better blacks secured, Eastman's Special Portrait was found to require three minutes and Professional Cyko of the Ansco Company demanded ten minutes. While these are only a few of the many papers on the market, and naturally do not represent the entire range, they are representative and the results will enable the reader to estimate fairly correctly the exposure required for any other brand of paper that he may desire to use.

The other Cooper Hewitt outfit used, shown in cut herewith, was the No. 54, or M-shaped tube recently placed on the market especially for printing and enlarging purposes. In this lamp the tube, fifty inches in length and one inch in diameter, is bent in the shape of the letter M so as to give four vertical columns of light, two and one-half inches apart, thus concentrating the illumination in a small area of sufficient size to fully cover an 8x10 negative.

This lamp has exactly the same current consumption as the other; but, owing to the increased tube length and better concentration the exposures were found to be just one-half that required with the No. 20 outfit in the case of the Velour Black and the Special Portrait Velox papers



ENLARGING WITH THE M-SHAPED TUBE

and a little less than half in the case of the Professional Cyko paper, while Royal Bromide required but two seconds and Cyko Enlarging required six seconds exposure as against ten with the other light. The two illustrations herewith show the arrangement of the lamps, diffusing screen and camera, and should be quite convincing as to the convenience and adaptability of these lights for enlarging on any type of paper generally used for the purpose.

The inclination is to assume that if a certain light will give an enlargement in a certain paper in half the time of another certain light, the stronger light has twice the power and will require just one-half the exposure in all cases. This our experiments proved was far from being the case. While the lamp last used required only one-fifth of the exposure, or two seconds instead of the ten demanded by the first lamp for Royal Bromide, the same lamp required six seconds in place of the ten seconds the first lamp required for Cyko Enlarging paper. In other words, the M-shaped lamp reduced the exposure on one paper to less than one-fourth while it did not reduce the exposure on another

quite one-half. This finding will cause some surprise to not a few who have never taken the trouble to investigate the matter. The explanation is one involving the variations in ratio of susceptibility to light due to the use of different silver salts in the various paper emulsions, and therefore hardly within the scope of a practical paper such as I hope this will prove.

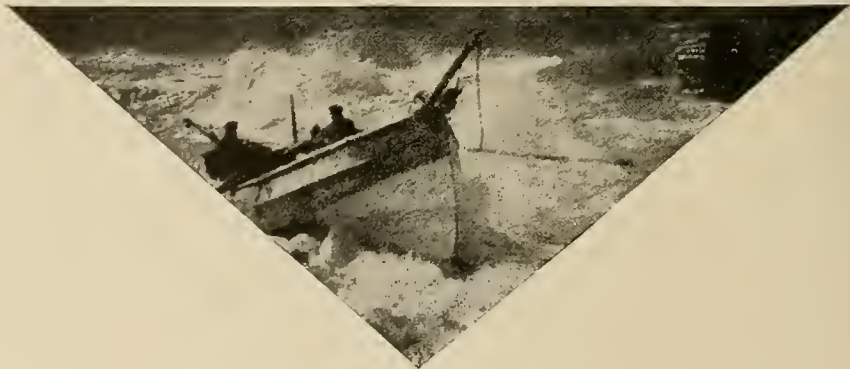


The Fourth Pittsburg Salon

The coming of the Fourth Pittsburg Salon finds the management of the organization in excellent spirits regarding the future of the exhibition. Great things are expected from the new members in the Pacific Coast States, and with the increased interest as indicated by numerous inquiries from almost every quarter of the country, there can be no question as to an abundance of material. The judges hope, when the task of selection is done, to find many contributors who are eligible for membership and one of the most exacting duties of the jury will be that of selecting from among the successful exhibitors, those whose pictures show special merit and salon quality.

Each of the thirty-five who at present constitute the Salon membership are workers of acknowledged ability, all of whom have achieved success in this country, while many have been recognized by foreign societies. The Pittsburg Salon possesses unequaled facilities for the display of the pictures, having at its disposal large and commodious galleries perfectly lighted by day and night, while its record for attendance exceeds that of any other photographic exhibition held in America.

Expression marks small things as well as big, still-life and humanity, the sentiment of Nature, and the mood of the artist. The poise of a chair, the spring of a bough from a tree, the dreary solemnity of winter, the brightness of spring, and the personality of a man or woman, all have significance, which is to be rendered by a negative no less than by a positive process, namely, the rejection of such matters as do not in themselves aid in conveying the particular idea that it is desired to produce.—ANTONY GUEST.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

SELF-RECORD NEGATIVES: From every good negative that I make I take a proof on Velox paper. Doing this permits me to determine, once and for all, the exposure time, and that is marked on the lower left hand corner, the figure representing seconds. These figures are enclosed in a triangle when "hard" paper is found best suited, and in a circle when the "soft" grade is required for the best results. As all these proofs are made with a certain light at a certain distance, the figures give the comparative exposures for all of my negatives. Even if I wish to use some other light for printing later, I need but know how much more or less time it required than did the old light. For example, I find the negative marked fifteen seconds and know that the new printing light being one-third faster than the one used when the original proof was made and the negative given its mark. I know that ten seconds is the right exposure. If I want to make an enlargement I look up some other negative from which an enlargement of like size has been made, and look for the notation on the envelope or container. I find that I have one that reads: "11x14 enlargement on P. M. C. requires twenty-five seconds." The exposure figure on the corner of the negative is 10. This being two-thirds of the exposure figure on the negative from which an enlargement is required, I know that the latter will require sixteen seconds for an 11x14 enlargement on P. M. C. bromide. The same way when I want to make a lantern slide or a carbon print; it is all a matter of comparing the exposure figure with that of some negative that has been used for a lantern slide or carbon print. The only care required is to see that the proof print, the one establishing the exposure figure penciled on the negative, is made with the same light and at the same distance therefrom as all the others. Should one change to another light he should maintain the old standard by making the exposure figure proportional to the difference between the new light and the old. Say the bulk of one's negatives have been given exposure figures with a certain light and a stronger light is then substituted. Say the new light is one-half again stronger. Then the exposure time marked on the negative should be two-thirds of the actual exposure given with the new light. But the best plan is of course to stick to one uniform light for making these proofs and establishing the exposure time figures for each negative.—W. A. S., Illinois.

THE TONE OF THE BACKGROUND: For a long time I could not understand how some of the home portrait workers secured the fine backgrounds that appeared so naturally subdued in their pictures. When I tried to do this kind of work my backgrounds came out very light with the figures in the wall-paper and other details very strong and obtrusive. Just by acci-

dent I discovered that it was all a matter of either cutting off the light that illuminated whatever was behind the sitter; or, if that was not possible, selecting such a position for the subject that the room behind was not too brilliantly lighted. If one wishes an extreme example of what can be achieved in this direction, let him pose his subject just outside an open door leading into a wood-shed or some such unpromising scene that is dimly lighted. Despite the fact that the eye can see a jumble of undesirable material for a portrait background, the picture will come out with a fine black background having excellent atmospheric effect. Seat the subject back in the room, open all the wood-shed windows and admit a flood of light, and all the objectionable surroundings will be painfully in evidence.—A. S. D., Florida.

THE CHEAP SINGLE LENS: There are a lot of photographers using a view camera with an extra bellows extension that is never brought into requisition because the lens they employ for all their view work demands only a portion of the available draw. If such workers would only send for and look over the lists of second-hand lenses that are advertised in this magazine, and then obtain and use one of these single lenses that are offered at bargain prices, they would greatly improve a good portion of their work. Care should be taken that one of too long focus for the available camera extension is not secured, and of course it is best to purchase one suited to the next size larger plate than that used, in order to permit of some rise and fall without cutting off the corners of the plate. But where speed is not required, as in most landscape and view work, the long focus of the single lens will quite often give much better results than will the more costly double lenses known as rapid rectilinears and anastigmats. This is due solely to the better perspective secured. The higher priced lens of an equally long focal length would be just as good for the purpose, but it would cost several times as much and the high speed that occasions the high cost is not always required.—A. S. D.,—Connecticut.

PHOTOGRAPHING MEDALS: I was recently called upon to photograph a number of medals, the prints being required for reproduction. With an ordinary perfume atomizer, costing but a few cents, I gave each medal a soft spraying with a neutral gray water color that washed off very easily when the work was done. The camera was pointed downward sufficiently far so that the background was at an angle of about forty-five degrees, enough so that the medals would not slide out of position although not fastened. While the light was a fairly strong one, the light from an ordinary window at the right as I stood behind the camera, the shadows were kept from being too hard by drawing the curtain part way down and allowing it to rise again, repeating this two or three times during the exposure. The results were excellent and I was complimented upon their superiority over those of an expert photographer in another city.—J. K. L., Ohio.

IMPROVISING A LARGE TRAY: In order to make a serviceable tray for an occasional enlargement, one has only to knock together a shallow box of the desired size and in this place a piece of common white oilcloth to serve as a lining. When done, the lining can be flattened out on the bench and wiped clean, ready for placing aside until again wanted.—A. S. O., Florida.

CAMERA CRAFT

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A Photographic Degree

About every so often some member of the profession, or some photographic writer or editor, brings forward, either at the National Convention or in one of our photographic magazines, arguments as to the need of some form of recognition of exceptional photographic excellence. These enthusiasts affirm the need of an academy, an "inner circle", a national society, some august body that could confer or award a degree, with appropriate initials that the honoree might use after his name. As far as we can see, these ideas are all based on a desire to imitate the artists who add to their names the initials of the art societies to which they have been admitted. The general apathy which the rank and file of even our better portrait photographers show in this matter is far from being a reflection upon their wisdom. Until such time as there is created a photographic society having the standing and importance that would make admission thereto an honor to be striven for, rather than one that is not even desired by some of our best and most successful photographers, the awarding of any sort of a degree would mean but little.

When we stop to think that the work shown at the conventions held by our National Association, and particularly the work to which the prizes are generally awarded, is not the work that the photographer makes for his patrons, the inconsistency of a degree based on such exhibited pictures, as well as the inconsistency of expecting the patrons of the photographer to attach any importance to the possession of such a degree, at once becomes apparent. On the other hand, the work that the artist of the brush may have accepted at one of the salons quite often is the work that his patrons most highly prize and for which their purses open the widest. Were our professional photographers engaged in the making and marketing of such pictures as those with which the awards are won at our annual conventions held by the Photographers' Association of America, or even were our portrait photographers engaged in the production and sale of work having its value based on its pictorial quality, an award, a degree, a recognition of merit by some suitable body would have a meaning, a reason for its bestowal and its acceptance. But the successful photographer, and he is often the winner of the convention exhibition and other awards, secures the patronage of his public, not on his ability to secure these awards, but on his ability to make photographs that will please the largest number of that public. And we all know quite well that the class of work that will achieve this last is hardly such as would secure serious consideration were the intention that of bestowing a "degree" in accordance with the degree of pictorial merit achieved.

At the best, the "art" of the successful portrait photographer is the art of securing, by means of an instantaneous exposure in the camera, somewhat

of an approach to the character delineation that the skilled portrait painter secures by a deliberate selection and combining of the various fleeting expressions of his sitter's face. Only as he selects for his subjects those whose characteristic expressions are well known to the judges, and only as such judges base their awards upon the success achieved in true character portrayal, can the photographer or his patrons place any value upon an award or the use of a set of initials after the name. True, the artist of the brush does not confine himself to this narrow appeal to the juries that pass upon his work; but it must be remembered that the work he seeks to market has a wider field than that of the photographer making portraits to be sold to the sitter only. The need of a "degree" or other evidence of superior skill or artistic feeling possessed by the photographer is not apparent to us; and, admitting such a need, the means of supplying it is hardly within the range of possibility under the conditions that now exist or that promise to maintain.

Professor Eder Honored

Professor D. J. M. Eder, who has for many years occupied the position of Director of the School of Graphic Arts and Professor of the Technical School, has been elected an honorary member of the Imperial Academy of Science at Vienna in the special departments of mathematics and natural science.

Sadakichi Hartmann Here

Sadakichi Hartmann, the poet, artist, writer and esoteric, better known to the photographers of the country by his pen name of Sidney Allen, came to San Francisco from Denver early in November. It is his intention to locate permanently here, and if his prompt and cordial acceptance into the art and literary life of this city be any indication, his part therein can hardly be other than an enviable one. His strange and unusual characteristics and the charm of his manner and conversation is such that both he and his work are compelling, even disquieting. His peculiarities, if such they may be termed, are due to a fullness, an overflowing, of the wines of life—its poetry, beauty, and mysticism, to which his sensibilities so readily respond.

The Annual Pittsburgh Salon

The Annual Pittsburgh Salon of Pictorial Photography will be held in the Art Galleries of the Carnegie Institute, Pittsburgh, Pennsylvania, March first to thirty-first, next inclusive. All prints submitted will be passed upon by an impartial and thoroughly competent Committee of Selection and only those possessing the highest merit in artistic expression and execution will be hung. This annual Salon is recognized as being distinctive and well worthy of the best efforts and co-operation of all pictorial workers and we trust that the Pacific Coast pictorialists will respond to even a greater extent than heretofore. The last day of entry is February tenth, and all pictures should be sent to reach there before that date. Entry blanks containing full information and conditions may be obtained by addressing G. E. Beeson, Secretary, 1900 Frick Building, Pittsburgh, Pennsylvania.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Three-Color Bromoil Transfers

Before going further, I would impress upon all those who wish to practice color work by any process, and especially in Bromoil, to experiment in the first place in monochrome. Several gentlemen who have communicated with me clearly show by their questions that they possess absolutely no knowledge of Bromoil printing, and when I said that Bromoil in colors was simple and fairly certain in results, I certainly did not mean to imply that any novice who had never made a Bromoil, or a Bromoil transfer print, would be able to carry through printings from three different negatives with any hope of obtaining anything but a failure. I wrote that article for people who are already experts in printing Bromoil, and therefore I did not even touch upon what I knew to them was the obvious, but, with the Editor's permission, I will here mention, without taking up much space, a few points which may help.

Before coming to that, however, I would like to say something regarding Mr. Hewitt's well-written and carefully thought-out article in a recent supplement. I was much pleased to read his remarks, particularly, as to the coincident conception of the idea of making prints through a half-tone or similar screen. And this seems not to be the only instance in which Mr. Hewitt and myself have been thinking along the same lines. I here refer to the idea of attaching the bromide prints to sheets of zinc. When oil printing was first introduced, and paper coated with gelatine, sensitized with bichromate and printed behind the negative, was shown to be practical, I experimented with paper attached to sheets of copper by thin rubber tissue. These I coated with gelatine, sensitized them, and after printing and inking in the usual way, applied another coating of gelatine. This when dry was again sensitized, and the next color applied. The third printing was carried through in the same manner.

The theory that gelatine so treated will attract a greasy ink where it had been hardened or tanned and repel it when swollen with moisture is perfectly sound, and under normal conditions will always act the same or nearly so, but the least inequality in the coating or in the drying, and this also applies to the drying after being sensitized, will completely upset matters. I was so convinced that patient practice would overcome these difficulties that I set to work and devised a printing frame, so arranged with a hinged carrier to hold a transparency of the subject, and another carrier regulated by rack and pinion at the sides and ends for the negatives in order to obtain register. The frame was made so as to tilt to an angle of forty-five degrees, and thus with the negatives in the movable carrier and the transparency folded down in contact when, with reflected light as in a retouching desk, the negative and transparency were easily brought into register and the former fixed there. Studs at each end of the frame fitted holes punched in lugs on the ends of the copper sheets so that any number of printings could be made from any negative or any number of negatives brought into register with the transparency. The theory here of obtaining correct register was perfect, and I intended to patent this device, as it can be equally well applied to collotype in making the print plates all three in register to start with. In oil printing in three colors the difficulties with the different coatings of gelatine were very great, but I did succeed in making some fairly good prints in gum-bichromate. Mr. Hewitt's suggestion of zinc as a support for the bromide prints has set me thinking of that old printing frame and a means of obtaining register of prints and screen at the same time.

In having the bromide print attached to a metal support there is another advantage, viz., the prevention of uneven stretching when being soaked for inking. Paper cut to, say, whole-plate size may, in fact, almost certainly will, stretch, some one way and

some another just as it has been cut from the roll. This difficulty can be overcome by using paper of large size, that is, large enough to permit three pieces being cut in the same direction. Thus, a 12x15 sheet would give four pieces, all cut in the same direction, the fourth piece being for trial exposures. Paper cut in this fashion will stretch the same in all three, and should register well in Ozobrome, Raydex or Bromoil. When a metal support is used it doesn't matter how the paper has been cut. Difficulty will probably be met with through the heat necessary to attach the bromide print to either zinc or copper. The print may develop and bleach all right and yet give trouble when the pigment is applied. To those who have the time, and certainly few professionals have any to spare at present, the idea of a screen may be of value, but meantime the method advocated in my first article will repay the trouble if patience be exercised.

To those who are not acquainted with the Bromoil process but who contemplate taking up the method the course is clear, and no great difficulties have to be overcome. Take any bright, clean negative, make a bromide print on a smooth or matt surface paper, use an amidol developer and a plain hypo fixing bath. Time the exposure so as to permit five minutes at normal temperature, in the developing dish. If at the end of that time the print is fully developed without showing any signs of fog in the high-lights, fix it for ten minutes, wash it for twenty minutes, then bleach it in Sinclair's or other good bleacher at a temperature of about seventy degree Fahrenheit, wash it for five minutes in water about the same heat, fix in acid fixer, also warm, for five minutes, then wash for a few minutes and leave the print soaking in the warm water while the slab, ink and brush are being prepared. A couple of sheets of blotting paper made moist and laid on a sheet of plate glass is a good basis, and if the glass is large enough the ink can be spread and mixed with medium on one corner. The print is now taken from the water and laid on the wet blotting paper, the superfluous water mopped off with a linen rag, moistened and wrung out, but not dry, and the print is ready to ink. Any color but yellow is quite good to practice with. This is difficult to judge, and even with experience cannot always be accu-

ately applied. A trial print is necessary, but for a beginning, red, black or brown will be easiest. The novice will soon see, and probably be much enamored, by the ease with which a picture is built up. As soon as the print seems strong enough, light hopping will sharpen it up, brighten the high-lights, and generally improve it wonderfully. A transfer can be made on any clean, smooth paper. An ordinary copying press or a dry-mounting machine will answer quite well for a beginning. A number of prints can be made from the same bromide print, it only being necessary to clean the print with a few drops of benzole or petrol, if it can be obtained. Soak the print for a few minutes and ink it again. Once a worker gets this far he will probably soon tackle the three-color method, and then he must be careful.

In portraiture, whether in color or monochrome, the face will always be of the highest importance; while in landscape the sky must have special attention. In both branches Bromoil in three colors offers possibilities unattainable by any other method. This is especially true in regard to the sky and to clouds. The different printings being so completely under control, any kind of effect can be obtained. In a sunset, for instance, the yellow glow can be made as strong as desired, while the reds and purples will answer to command. There is a field here for the impressionists which is as wide and open as the ocean. I can imagine the most lurid effects in purples and reds, some of which might come by accident rather than design, and the very uncertainty of the thing might add a charm to some workers. But to the hard-working professional who has no time for impressionist work the face, texture and color in dress fabric is of more importance. In what may be termed "straight" color photography every phase of color should be correctly and truly rendered, but no fair sitter would be content with this. Retouching must be resorted to just as in ordinary studio work, but with this difference: no modeling such as is necessary in monochrome is permissible in color work. In fact, the negative taken behind red screen, and from which the blue print is made, seldom requires anything more than spotting. In the other two taken, behind the green and blue filters, respectively, much can be done, and in the case of pimples or freckles these must be entirely removed. It is here

A PHOTOGRAPHIC DIGEST

that improvement lies, and where every professional can work with advantage. In addition to pimples and other defects of that kind, the face can be greatly improved when the color on the cheeks is too pronounced. This can be smoothed and rounded just as in an ordinary negative, and, if judiciously done, will make a vast improvement in the finished print. I am aware that every studio is so busy at present that no attention can be given to Bromoil, it is bromide, and as fast as it can be done, but I shall be disappointed if after the war Bromoil in three-colors is not taken up extensively.—Charles Donaldson in *British Journal of Photography*.

Stained Bromide Prints

At the outset it is advisable that we endeavor to discriminate between fog and stain, but at the same time it is not easy to tell the beginner in a few words what is the difference between them. Perhaps a few generalizations may be more helpful than a high and dry scientific definition. Stain may be local or general. It is often colored, and perhaps more often yellow-brown, but sometimes pinkish or even bluish. Fog is more usually local, but may be general. It is nearly always gray or black, but sometimes greenish-black. Fog is granular, stain is not.

Among the *Causes of Stain* may be mentioned; stale paper; paper stored in a damp place; developer stale, oxidized or too cold; slow development; exposing the print to the air during development; prolonged development; under-exposure, which also seems to favor staining, perhaps because it tempts one to prolong development; not rinsing off the developer before fixing; touching the print saturated with developer with hypo-contaminated fingers; and insufficient preservative (e. g., sulphite, etc.) in the developer. Taken collectively these several charges are largely equivalent to "oxidation of the developer", or developer stain.

It is interesting to note that while dozens of formulæ have appeared which concerned stained negatives, very few have been suggested for stained prints. One reason for this is that pyro was and still is a very general favorite for plates and films. It found less favor for paper work, giving place to the more recently introduced so-called "non-staining" developers. True, pyro more quickly gives stain than perhaps any other

developer (but this need not be so at all), while when the non-staining developers fail to uphold their reputation they give stains which are chiefly remarkable for their tenacity.

But from a number of experiments with stained prints I incline to think these "non-staining" stains can be removed. At any rate, I have succeeded in removing them in all cases so far tried. However, as this is a rather tedious process of several stages, it may be acceptable to mention a few one-bath procedures which are worth trying first of all. In the case of pyro-stained prints there is quite a good chance of thus removing the stain if it is not very pronounced.

(1) Water twenty ounces, common (pot-ash) alum one ounce; or preferably chrome alum one-quarter ounce, hydrochloric acid one dram.

(2) Water two ounces, thiocarbamide twenty grains, citric acid twenty grains or nitric acid five minims.

(3) It is convenient and economical to prepare small quantities of saturated solutions of potassium permanganate, sodium chloride (kitchen salt), and chrome alum. At ordinary workroom temperatures, say from sixty to seventy degrees Fahrenheit, the following will give the reader some rough idea of how much water is required to dissolve one part of each of the above-named three salts, viz.: potassium permanganate, one part, water fifteen parts; table salt one part, water three parts; chrome alum one part, water six parts.

Now to proceed with a yellow, brown, or pink stained print. In one ounce water dissolve ten grains citric acid; when this is dissolved, add chrome alum solution five minims, then salt solution fifteen minims, and finally potassium permanganate solution fifteen minims. Bathe the stained print in this deep-violet solution, wherein it will gradually bleach. Bleaching must be sufficient at any rate to cause nearly all, if not all, the blacks of the prints to change. This may take anything from three to eight or ten minutes. The print is now rinsed on *both* sides under the tap for say half a minute, and then bathed in water one ounce, potassium metabisulphite ten grains, soda bi-sulphite twenty grains, or until both paper and image are quite white and color free. The print is again washed for at least a minute, and preferably five minutes, and

then redeveloped in any developer that is not stale or slow acting. If citric acid be not at hand, two minims of hydrochloric acid or four minims of sulphuric acid may be used. But, for reasons into which one need not now enter, my present preference is for citric acid. I *think*—but this is only conjecture at present—that tartaric acid might equally well be used if more convenient. By the above procedure I have removed both yellow, brown and pink stains.

Finally, a word of warning. Developer stain is frequently accompanied by more or less fog, especially round the edges of stale paper. While the foregoing may confidently be expected to remove the stain, the big chances are that the fog will again appear on redevelopment.—W. Norwood, in *Amateur Photographer*.

War Photography

G. H. Malins, of the Gaumont Company, who has been out at the front taking cinematograph pictures for a year, is responsible for about one-third of the Somme film. Before the opening of the offensive on July first he had cinematographed from an aeroplane the whole of the Belgian and the British front from a height of ten to thirteen thousand feet. A section of the pictures he took on this flight has been shown in the picture theatres, but the greater part has been reserved for the use of General Headquarters. For a time he took pictures on the French front near the Vosges. He had a narrow escape just before the great offensive, two bullets passing through his service cap as he was taking down his camera, which had been fixed in a trench, with the lens placed between sandbags. He then made his way back to a village into which the Germans were dropping tear-shells. Finding his car, which had been left there, he drove away, but both he and his chauffeur were so affected by the tear-shells that the car fell into a ditch, where they left it, carrying the camera some miles along a shell-swept road, but eventually delivering the films.

J. B. McDowell, of the British and Colonial, left England to take cinematograph pictures on June twenty-eight, and the next day began to "film" the artillery preparations for the great offensive. On July first he filmed the leap from the trenches and other stirring pictures, often from such exposed positions that he had to be called away. While he

was taking several of the pictures shrapnel burst overhead, and bullets struck the ground in front of the camera.

The Aperture For Copying

In a recent discussion on copying at the R. P. S. the question of small versus large apertures was raised, and some rather doubtful theories suggested. The matter of diffraction, of course, cropped up, but we believe that this has no appreciable effect on definition unless apertures of the order of f-80 or smaller are employed, and such apertures need not be considered for practical copying purposes. Nothing less than f-64 is generally available, and most usually f-45 is the smallest provided. Another suggestion to the effect that if spherical aberration exists in the lens then a small stop may be detrimental, we are unable to follow at all, for, as a rule, the smaller the stop the less important is spherical aberration, which defect is generally best remedied by stopping down. Neither are we at all disposed to argue with the contention that, however good the lens, a small stop is best for the reproduction of fine lines. We made some experiments on these lines some years ago, and found that with good anastigmats the definition of fine lines was distinctly worse with small apertures than with large ones, a result which is only what should be expected. A rapid anastigmat is corrected mainly for its largest aperture, inferior definition at small apertures being of no consequence, as the short exposure does not permit it to produce any visible ill effects. If a lens designed to give specially good definition at f-56 is used at f-45 then sixty-four times the exposure is required, and the inferior definition of the smaller aperture becomes apparent. One particular Goerz Dagor that we are familiar with gives its absolutely best definition at full aperture, and for copying we should never think of stopping it down. The idea that wide-angular aperture necessarily involves a spreading of light action in the film and a consequent blur is, we think, a myth. The bigger the aperture and the finer the definition the less is the exposure required, and the less effect can the feeble scattered light produce, while in any case the fine grain plates that are necessary for work of the type under consideration do not allow much spreading effect.—*British Journal of Photography*.

THE CAMERAMAN'S PAGE

Edited by Hal G. Hall

A Practical Department of Comment on Methods
and Apparatus

The Shutter Opening

There seems to be a somewhat common impression that there should be some mystical formulæ to determine the proper shutter opening in order to stop motion in the individual "frames" of the film. This impression usually results from examination of the film depicting either quite rapid movement of the subject or ordinary action taking place rather close to the camera. In both such cases the individual exposures often show perceptible blurring in the images of the moving object or performer. Judged as "stills", such blurred exposures are certainly undesirable. However, the object of a motion picture camera is not to obtain a series of perfect "stills" but to produce an impression of motion. Incidentally the motion picture camera, using standard size film, is not eminently satisfactory for the production of large still pictures, even under the most favorable conditions.

Theoretically, a motion picture should consist of a number of consecutive exposures, each of which would show the moving object in an imperceptibly different position from the preceding exposure. With a rapidly moving subject, this idea would involve a greater number of individual exposures than sixteen per second and each "frame" would necessarily be exposed for only a very small fraction of a second. Incidentally, such brief exposures would make sufficient exposure, under usual working conditions, out of the question. In addition there would be other insurmountable, practical difficulties, including liability to injury to film at high rate of speed, increased footage expense, etc.

Now, practically any good, modern projector will show an almost flickerless picture of a stationary object at the customary speed of about sixteen frames per second, and it simply behooves the cameraman to so get moving objects, at this speed, so as to be projected to good advantage.

Upon casual thought, it might seem that

with a rapidly moving subject, the shutter speed should be increased to obtain a sharp image, as in "still" photography. However, if the movement is so rapid as to show blurred on the screen, cutting down the shutter will, by increasing the interval between the individual exposures, increase those between the rapidly changing positions of the image, with the result that jerkiness of the projected image takes the place of blur due to rapid movement. In most cases the jerkiness on the screen is more objectionable than the blur due to movement.

The practical inference is that the largest, rather than the smallest, possible shutter opening is desirable. This is practically verified by tests with a Pathe camera, making comparative exposures on a rapidly moving object with a full shutter opening of over one-half circumference, and at the smallest opening of about one-sixth circumference. Though the individual pictures are sharper in the latter case, the effect on the screen is more natural with the film made with the larger opening.

In practice, when the movement of the performers is so rapid that a large shutter opening cannot be used without undue blur, either a more distant set-up should be selected or the performers should be cautioned to slow up somewhat.

Film Saver For Pathe

A device is now supplied by G. Gennert enabling one to focus directly on the film with a Pathé camera of outside magazine type, without exposing more than the one frame of film on which the picture is focussed. The device consists of a perforated pressure plate in the back of which fits a tube extending from the magnifier in the back of the camera. With this attachment properly fitted, pictures can be almost instantly focussed and framed accurately on the film by merely lifting the cover of the magnifier and turning crank, if necessary, until shutter is

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open. The lower film loop passes around the focussing tube and is protected from light by this tube that connects magnifier and aperture plate. Pressure is obtained in the middle of film by two narrow burnished steel bars placed vertically in the aperture. The perforated pressure plate sells for six dollars and a half, and the tube for a like amount.

Stereoscopic Motion Pictures

A Chicago man has invented another system by which it is claimed stereoscopic motion pictures can be shown. A double width film is used and both camera and projector are equipped with two lenses. Alternate pictures are shown from opposite edges of the film. Uniform illumination in projection is obtained by the use of a single light reflected equally through both edges of the film. We wonder why this could not be combined with the Kinemacolor idea, producing stereoscopic pictures with both motion and color?

Another Animation Stunt

A process of animation in drawings is now being worked out by a Los Angeles man who uses a company of actors, filmed in about the usual way. Each individual "frame" is enlarged, the outlines drawn over with water-proof ink, and the photograph bleached out. The set of drawings obtained in this

manner are again animated by photographing in consecutive order as in the usual process of animation for cartoons. Seems to us a rather roundabout process; besides much of the comedy in animated drawings is due to the unnatural action. Ingenious idea, however.

What Exposure?

J. B., Chicago, inquires: "What exposure shall I give with f-3.5 lens and one hundred and twenty degree shutter opening; and is f-4.5 on Carl Zeiss lens equal to f-4.5 on Heliar?" We would suggest careful reading of our article on exposure meters in the December, 1915, issue. Very roughly speaking, f-3.5 gives ample exposure on open scenes in very dull weather, on subjects in rather deep shade in good weather, or near windows indoors; f-5.6 gives good results in average brilliantly lighted shade; f-8 in shade with strong reflected light, or in open with slightly hazy weather; f-11 in very good light; and f-16 only for distant scenes, mountains and sea in very bright light. However, correct exposure depends upon a great many factors. Some judge by focussing on the film and then stopping down until the image is barely visible. F-4.5 is the same on both the lenses mentioned or any others so marked.



CLUB NEWS AND NOTES

**Club Secretaries and others will oblige by
sending us reports for this Department**

Chicago Camera Club

This progressive club announces, in its last bulletin, an excellent programme as follows: Wednesday evening, November first, a talk on "The Publishing of a Motion Picture Weekly", by L. C. Wheeler, editor of the Selig Tribune Weekly. Monday evening, November sixth, a visit to Dearborn Observatory at Evanston, where Professor Fox will demonstrate the use of the observatory instruments and show slides of astronomical photographs. Wednesday evening, November fifteenth, there will be the final selection of prints for the Fall Exhibition of the Club, and a week later there will be the final selection of slides for the An-

nual Exhibition of the Club and the interchange set. Wednesday evening, November twenty-ninth, will be devoted to a brief business meeting to be followed by a review of current issues of the photographic magazines and the refreshments that will be served.

Facilities for photographic work of all kinds are provided in the club rooms, and these include a portrait studio and equipment for enlarging, printing and the making of lantern slides. This excellent equipment, together with the incentive derived from association with other workers, is of incalculable value to the members and not a few additions to the ranks are expected this winter.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

"A Mysterious Effect" Explained

Our good friend and occasional contributor, C. R. Lowe, writes: In "The Amateur and His Troubles" in the October issue there is a paragraph from *Photography*, entitled: "A Mysterious Effect". This mysterious effect is "the light-line which is seen around some well defined object in an enlargement. It is seen only where there is an abrupt contrast and, so far as we know, only in enlargements. It has been suggested that it has some optical explanation, some altered refractive power in the film of the negative at those parts. * * * Another theory which has more in its favor is that it is due to the developer along such a line being highly restrained by the passage into it of bromide from the developer which has been acting extensively on the adjacent deep shadows."

I wish to submit the following simple and easily demonstrated explanation of this "mystery" for the consideration of the reader, for the benefit of those who have wondered concerning this light-line, and especially that it may come to the notice of *Photography*. My explanation will at least clear the ground of the "theory which has more in its favor", and also of the idea that it is because of the "passage of bromide from the developer 'where' it has been acting extensively on the adjacent deep shadows". The fellow who said it was "some altered refractive power in the film or the negative at those parts" will perhaps agree that he should have said: "A peculiar refractive power, etc."

Long ago, in studying the phenomena of light in my class in physics, I learned, and have since observed, that light, in passing across an edge is refracted in such a manner as to form a series of light and dark lines on an interposed screen. Why this is I cannot say; the final why of all phenomena being as it probably always will be, both a mystery and a miracle. The fact that an edge refracts passing light rays into such

a series of light and dark lines reveals the why of this "mystery". The line of "abrupt contrast" in the negative from which the enlargement is being made is an ideal edge, always in the right conditions to produce this effect of refraction.

These lines or zones of light and dark are carried through the lens on to the enlargement. Such lines might also appear on a negative, but one seldom if ever exposes on a subject having all the light behind falling over an edge, so as to produce the proper condition, consequently this effect appears only in enlargements.

The lines in question are not due to "some altered refractive power of the film" because a line or edge produced by pasting a piece of black paper on a sheet of glass will produce the same effect. And by the same token, this line is not caused by any bromide which has become separated from the developer and deposited close to where there has been strong action in adjacent shadows. This line effect is in no way extraordinary because it is the rule under certain conditions, and these conditions always exist when there is a line of abrupt contrast in the negative from which an enlargement is being made. It is caused by a natural refraction that is perhaps peculiar, simply because it is not conformant to our usual ideas and experience with refraction. It is simply a natural phenomenon of light.

Now, lest anyone think I am "hollerin' in a rain bar'l," just let him try it for himself. Let him do this: Go into a cellar where there is only one window and close up all but six inches of it, making a straight, sharp edge over which the unobstructed light from the sky will come through. Do not have the sun shining in, but the reflected light from the open sky. Six or eight feet back from this window hang a sheet of a white background for a screen. He will see for himself. Many a time I have seen the same kind of lines on a white wall, caused by the light coming through a narrow opening

in an outside door. If one will try this experiment he will come back wondering why there are not several of these light-lines in the enlargement instead of one. I have seen as many as a dozen of these lines on the wall from one opening. Further, it is reasonable to suppose there is more than one of these light-lines, but all except the first or most pronounced one are so faint as to be undistinguished, and of course there is also a dark line corresponding with each light-line. Examine your enlargements very carefully and see if you can discover any.

What Is a Good Negative?

One of my recent visitors explained how he was able to determine when he had secured a perfect negative. Not that he stopped to apply the test to every plate that he developed; but, as he frequently had occasion to follow the procedure that constituted so doing, the test was made interesting and instructive. This procedure consists of trying the printing quality of a negative on the three grades of paper, namely, hard, soft and normal. According to our visitor, and there is much reason to his claim, a perfect negative will give a good print on all three grades, although the one on hard paper will of course be slightly more contrasty and the one on the soft emulsion less so. We are all familiar with the kind of negative that will give a good print on only one grade of paper, and those are certainly not good negatives. While perhaps not quite so well acquainted with them, we all know of certain negatives that do not seem to resent being printed on any old paper that we may have at hand. The reason why a good negative is so adaptable is a very simple one. The scale of gradation of the good negative is a somewhat longer one than any printing paper can register. When we use a soft working paper we simply shift that scale of which the paper is capable to the lower end of the longer scale of the negative and so secure that fine gradation in the lights to a greater extent than we do when using a hard paper which uses the other end of the same scale. A contrasty or hard negative lacks gradation in the lighter tones and a soft paper is used to advantage, a thin negative requiring just the opposite, as a matter of course. A negative that is neither hard or soft but simply lacks in range of gradation, perhaps reveal-

ing only three or four tones, should be printed on a normal paper except as it may be desirable to conceal this lack of a gradation by keeping the print either high or low in tone. This can be done by sacrificing either the lights or the darks as one will do by using either hard or the soft grades of paper. The good negative has a full range of gradation with an entire absence of fog or veiling, and consequently the slight variations due to the use of different grades of paper are not important except as they may more or less favor the particular kind of result one aims at in the finished print. Furthermore, it will be found that if one desires to make a print in a medium like carbon, one having the greatest possibilities in the way of gradation, the good negative is the only one that will reveal all the good qualities of that process. While one may be easily able to secure good prints from his negatives by the simple expedient of selecting the right grade of developing paper for each, such negatives will prove very disappointing when it comes to using them for making prints in a less accommodating medium. Even the making of enlargements requires a much nearer approach to the perfect negative than is secured by the average of the negatives of today. For that reason it is important that the worker at all times strives to produce as good a negative as he possibly can, despite the fact that he may be able to secure good prints from such as he makes without great care in that direction.

Figures in Landscapes

As we all know, figures in landscapes are dangerous. One either feels that they are too small to be other than a distracting detail or else so large as to be entirely too prominent. Even when neither of these faults are serious apparently, the figures too often seem stiff and wooden. Recently I had the pleasure of going over an old collection of wood engravings depicting historical views about the British Isles. In many of these figures had been introduced in such a way as to give an added interest to the pictures. The skill displayed by the artist consists of having the figures a little to one side of the foreground, posed easily as against a tree or reclining in the grass, with back to the camera, as if enjoying the view. The idea is a good one and well worth trying.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

To California Members

The State Secretary is particularly desirous of receiving three or four good prints from every I. P. A. member in California. In exchange he will send his own work in fair exchange and will undertake to satisfy each one who will be kind enough to act in accordance with this request. He is very anxious to secure a representative collection of the work of the present membership throughout the State and will appreciate the co-operation of every California member. Prints should be sent to A. E. Davies, 695 Sixty-first Street, Oakland, California.

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NOTE.—I. P. A. members, or applicants for I. P. A. membership, desirous of joining the Post Card Division, should enclose three or more cards of their own make to the Director for approval. If they are of requisite quality, a letter "X" will be placed after the member's number, indicating membership in the Post Card Division. Always request a new notice in renewing your subscription. When desiring a reply from the Director, kindly enclose stamp. Address Charles M. Smythe, 1160 Detroit St., Denver, Colo.

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NEW MEMBERS.

4257—Miss Alice Walker, Harper Hospital, Detroit, Mich.
Class 2.

4258—G. S. Wright, Tunnelton, Ind.

Post cards only. Class 1.

4259—Hugh T. Hart, cor. Main and Liberty, Spartanburg, S. C.
Professional photographic portraits; for the same. Class 1.

4260—Mrs. Annie M. McLeod, P. O. Box 127, Point Reyes Station, Cal.

3½x5½ and 3¼x4¼, various developing papers, of landscapes, water scenes, children and miscellaneous; for children, landscapes, animals and miscellaneous. Class 1.

4261—John Asser, P. O. Box 701, Chico, Cal.
Postals and 5x7, various papers, of land-

scapes, mountain scenery, seascapes and marine views; for the same. Class 1.

4262—W. J. Breckinridge, 30 Bland St., Bluefield, W. Va.

Professional photographs of children and women; for the same or anything that will give new ideas. Class 1.

4263—A. Castonguay, 331 Dalhousie St., Ottawa, Canada.

Cabinets and 8x10, various papers, of women's heads, fancy lights (amateur artist); for the same to exchange ideas in posing. Portraits only. Class 1.

4264—E. C. Hirsch, Park Falls, Wis.

2½x4½ and 5x7, various papers, of landscapes, farm scenes, animals and children; for mountain scenery, foreign scenes and nude figures. Class 1.

4265—Chas. Beaver, R. F. D. No. 6, Burlington, Kans.

Class 2.

4266—G. Enstrom, 425 Kirby St., Menominee, Mich.

Class 2.

4267—Wm. A. Davis, 918 Clements St., Lake Charles, La.

5x7 and smaller, various papers, of views, portraits, etc.; for the same. Class 1.

RENEWALS.

317X—J. C. Hegarty, Utahville, Pa.

3½x5½, 4x5 and 6½x8½, of landscapes and views made in different parts of the United States and Canada; for anything of general interest. Good work only. Class 1.

2645—Hugo H. Schroder, 308 E. State St., Bettendorf, Iowa.

2¼x3¼ to 5x7 and post cards, developing papers, of birds, nests, landscapes and miscellaneous subjects; for birds, nests, flowers, wild animals, nature studies, draped and nude studies and any interesting subjects. Class 1.

3467—Rev. Paulus W. Weber, Box 87, Crivitz, Wis.

4x6 and larger, various papers, of pictorial work of landscapes, portraits and genre; for only pictorial work, users of Verito lens especially invited to exchange, double weight paper only and not smaller than 4x6.

Class 1.

4104X—George Plass, R. F. D. No. 8, Vincennes, Ind.

Class 2.

4148—Roy S. Hunt, R. F. D. No. 1, Bryant, Ind.

Class 2.

4156—Thos. P. Mason, 2333 Lawn Ave., Kansas City, Mo.

2¼x3¼ and 3¼x4¼, developing papers, of land and waterscapes, genre and picturesque places of worship; for the same, especially the last named. Class 1.

4174—Aug. Gaarz, 301 Arbor Vitae St., Cleburne, Texas.

5x7 and smaller, developing papers, of figure studies only; for the same. Class 1.

CHANGES OF ADDRESS.

3738—Wm. F. Prevett, 1748 Ogden Ave., Chicago, Ill.

(Was 1133 W. Jackson Blvd.)

4037X—Alfred Geo. Wolff, 263 W. 153rd St., New York City.

(Was 157 Fulton Ave., Astoria, N. Y.)

4200—Ira J. Bugbee, 456 N. Catalina Ave., Pasadena, Cal.

(Was National City, Cal.)

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

F. C. Lee of Fresno has reopened his studio.

Charles Boussum has added two studios to his chain, Vallejo and Hanford.

Franklyn Harris has taken over the Simon studio in Merced.

The Christmas rush is already on according to Mrs. John O. Tucker of San Jose.

Some fine photographic window displays characterize the Roberts & Horwarth studio of San Jose.

W. M. Hefton, the popular Hanford druggist, was recently killed in an automobile accident.

Forsmark & Son of Turlock are adding more new furniture to their studio.

V. E. Hammond's studio in Tulare is again running full force.

The Crittenden Sisters have taken over the Brooks studio in Porterville.

An Interesting Booklet

We have just received a very attractive piece of printing on hand-made Japanese paper, bearing the above title. This booklet goes very fully into a discussion of the merit and beauty of Artatone prints and enlargements, together with information as to how they are made. The booklet contains some very good illustrations, having to do with the manufacture of the hand-made Japanese paper, which forms the basis for the Artatone prints and enlargements. This booklet should do a great deal towards the popularizing of the unique and handsome prints and enlargements on Artatone that are turned out by the International Photo Sales Corporation. The firm has been, during the short time this service has been established, most successful in pleasing a number of the best workers, workers who desire the most expressive and artistic medium for the interpretation of their work, and we are confident that if any of our readers would try this service they will be more than pleased therewith. The booklet

they will gladly forward upon request and upon receipt of ten cents in stamps they will also send a $3\frac{1}{4} \times 5\frac{1}{2}$ sample Artatone print. Inquiries should be addressed to the International Photo Sales Corporation, 7 East Fortieth Street, New York.

Some Profitable Novelties

On another page will be found the advertisement of what is perhaps the largest manufacturer of photographic novelties in this country. The enterprising photographer will find that the introduction of an occasional novelty that can be sold at a popular price will do much to stimulate business and in itself prove profitable at the same time. This firm manufactures an endless variety of goods in their line, in fact, an advertisement such as theirs can hardly do more than suggest the beauty and variety of their goods. We have, during the past year, received not a few inquiries from subscribers asking where photographic novelties of this character could be obtained and it therefore gives us not a little satisfaction to be able to place before our readers the advertisement of a firm as reliable and as prominent in its field as the one in question. Those interested in goods of this description will do well to address the Cruver Manufacturing Company, corner of Jackson Boulevard and Weston Avenue, Chicago, Illinois.

Establishing Branches

November fourth, T. Ono, one of the vice-presidents of Herman & Herman, Incorporated, sailed for Japan to open offices in that country. Mr. Ono will make his headquarters in Osaka and will take charge of his firm's business in the Far East. On the same day, George W. Fiske, another officer of the company sailed for South America to establish branches in Rio de Janeiro, San Paulo, Buenos Aires and Santiago. Herman & Herman, Incorporated, is a chemical firm that is actively extending its foreign service as well as giving every attention to

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its rapidly growing trade at home, particularly the demand for Diamidophenol, the developer so fast growing in favor with all classes of photographers.

Some Very Useful Information

There has just reached us a little booklet bearing the title "Useful Tables for the Photographer", containing a chapter on Diaphragm numbers and Uniform System Numbers, Reducing and Enlarging Tables; Table of Depth of Focus, Height of Image for Various Studio Distances; Table of View-Angles; Shutter Speeds for Moving Objects; a series of Lens Notes and a chapter on the Care of Lenses; the whole embracing much valuable information. Copies of this booklet will be gladly sent to any of our readers who will mention CAMERA CRAFT and address the Bausch & Lomb Optical Company, Rochester, New York.

Goerz Cameras and Lenses

We have been informed by the C. P. Goerz American Optical Company, 317 East Thirty-fourth Street, New York City, that adverse conditions caused by the European war have compelled them to cancel and withdraw all former prices. The company reports that while the war has somewhat interfered with the delivery of their cameras, yet, as regards lenses they have been more fortunate. Prior to the war they had imported a large quantity of genuine Jena glass which their completely equipped optical factory in New York City has been turning into Goerz lenses without interruption. At present the company is in a position to supply nearly all its lenses with but few exceptions. A new catalogue containing a list of such goods and accessories as they are able to furnish in reasonable quantities, is now on the press. It will also contain the new list prices which are about ten per cent in advance over the prices in force prior to October first, 1916, and will be ready for general distribution within a short time.

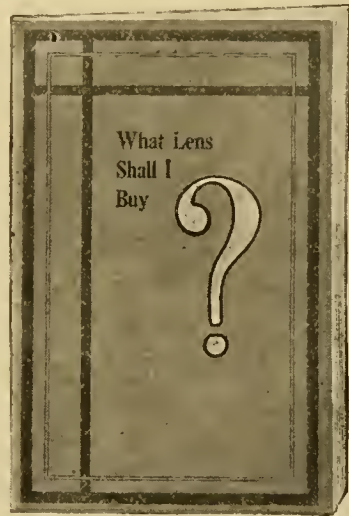
Electric Light Installations

Such of our readers as are interested in the possibilities of electric light for portraiture, printing and enlarging, should send for Bulletin No. 58-A, issued by Cooper Hewitt Electric Company. This bulletin, in connection with the article on Enlarging with Cooper Hewitt Lamps in this issue, should prove interesting, particularly as it

is illustrated with some fine photographic work by such men as Rau, Morrison, MacDonald, Hays, Newman and the like. A copy of the bulletin will be mailed promptly upon request by the Cooper Hewitt Electric Company, Eighth and Grand Streets, Hoboken, New Jersey.

Send For This

"What Lens Shall I Buy", is the title of a most instructive and helpful booklet just issued by the Bausch & Lomb Optical Company, Rochester, New York, and we would urge our readers to avail themselves of the



opportunity to secure a copy. It contains much valuable information concerning different types of lenses and their uses. Write the firm for a copy today before it is forgotten.

Some Excellent Photo-Colors

There has recently been placed on the local market a handsome set of colors containing fifteen tubes and full instructions for coloring photographs. Coloring photographs in oils has heretofore required considerable skill, owing to the opaque nature of the colors; but these new colors, while having all the desirable qualities of the best oil colors, are sufficiently transparent to make their application extremely simple. Many who have tried their prentice hand at coloring photographs are partial to water colors, for the reason that they do not destroy the drawing and gradation of the photographic image as do ordinary oil colors. These new

colors, being pigments ground to the very finest possible degree and incorporated into a medium that permits of the easiest and most ready distribution over any surface, either as a faint tint or full strength, make their application extremely simple while achieving the richness of work in oil colors. They blend perfectly, dry quickly, and both the novice and the experienced colorist will derive a degree of satisfaction from their use that is as unexpected as it is satisfying. These sets are now obtainable at all of the leading stockhouses and locally from Hirsch & Kaiser, Marsh & Company, and no doubt other dealers in this city. Particulars can be obtained directly from the manufacturers, A. Bielenberg Company, 67-69 Front Street, New York City.

The New Goerz Catalogue

As advised elsewhere, this contains, as intended, a list of such goods and accessories as the firm can furnish under the rather adverse conditions due to the European war. While neither bulky or elaborate, this new catalogue is a very attractive one and seems to list the very best of the Goerz line of cameras, while the lenses are apparently all in evidence, at least all the popular series. The new prices, a slight advance on those in force previous to October first, 1916, are shown. Send for a copy of this new catalogue, addressing: C. P. Goerz American Optical Company, 321½ East Thirty-fourth Street, New York.

Expert Assistant Available

From Charles F. Rice, well known to our readers for the several most practical and helpful articles which he has contributed to our pages during the past few years, there comes a compelling little leaflet entitled, "An Offer of Service—For a Consideration." Mr. Rice, whose address is P. O. Box 517, Mamaroneck, New York, tenders his advice and services in any matter connected with amateur photography, such as the choice of cameras, and equipments for various purposes, the overcoming of difficulties that may be encountered, instruction in developing, printing, enlarging, lantern-slide making, and other photographic processes. The fee charged is one dollar per hour for those who can consult him in person or a like amount for each letter to those at a distance. We can assure our readers, if such be necessary, 516

that Mr. Rice is thoroughly experienced and competent, and as his articles in our pages have shown, he is capable of imparting the vast amount of photographic information at his command. Those interested should get in communication with Mr. Rice by writing him at the address given above.

The New Campbell Flashlight Outfit

The new flashlight outfit announced by the E. V. Campbell Company of Richmond, Indiana, is well named the "Universal", being so complete that with it every class of flashlight work can be done. It has the controlled-light bag for portraiture, a special "all white" bag for other work and the "Multiple - fuse" ignition, giving twelve flashes without fuse renewal. It uses either the small pocket searchlight battery or the ordinary house electric lighting current. Where necessary, two or more of these outfits can be used and fired at one time by the same pressure of the bulb that operates the camera shutter. Anyone at all interested in flashlight work should correspond with the manufacturers who will gladly explain any detail. Hirsch & Kaiser of San Francisco have been appointed their Western distributors.

Illinois College Notes

The Mercantile Company at Guadalajara, in which one of our recent graduates, Francisco A. Viscaino was employed, has been forced to discontinue business, owing to the unsettled state of affairs in Mexico.

C. L. Weed of the Smith-Butterfield Company of Evansville, Indiana, made his regular visit to the College a short time ago. As a rule, he gives a talk at Assembly, and some of the ideas put forth are very practical and helpful.

During the past month a new Ansco Professional Enlarging Outfit was donated to the College by the Ansco Company of Binghamton, New York. This machine is the latest and best made by this company, and the students are highly pleased with it.

Cupid has again been busy, William J. Coupe of Detroit, Michigan, and Miss Bess Moran of this city, being the victims. The groom attended the College of Engraving in 1911, and is now employed in one of the leading engraving establishments in Detroit, where the happy couple will make their home.





